AD NUMBER

AD820399

NEW LIMITATION CHANGE

TO

Approved for public release, distribution unlimited

FROM

Distribution authorized to U.S. Gov't. agencies and their contractors; Administrative/Operational Use; Jun 1967. Other requests shall be referred to Naval Air Systems Command, Attn: NMC, Washington, DC 20360.

AUTHORITY

USNWC ltr, 17 Apr 1979

NOTS TP 4143
Part 2

STORAGE TEMPERATURE OF EXPLOSIVE HAZARD MAGAZINES

Part 2. WESTERN PACIFIC

by

I. S. Kurotori and H. C. Schafer
Propulsion Development Department

ABSTRACT. Storage magazine temperature measurements (188,614 data points) from the tropic regions of the Pacific are under study. The areas under consideration are the Republic of the Philippines, Hawaii, and Guam. This data collection is for the purpose of establishing a temperature criterion by statistical methods for ordnance stored in explosive hazard magazines.

This report is the second of the series of reports which will cover explosive hazard magazine storage throughout the world. This report includes 47 figures and 14 tables.

U.S. NAVAL ORDNANCE TEST STATION
China Lake, California
June 1967

U. S. NAVAL ORDNANCE TEST STATION
AN ACTIVITY OF THE NAVAL MATERIAL COMMAND
G. H. LOWE, CAPT., USN, Commander
WM. B. MCLEAN, PH.D., Technical Director

FOREWORD

This report is a continuation of the work covered in TP 4143, Part 1, American Desert. The effort described herein was undertaken by the U. S. Naval Ordnance Test Station (NOTS), China Lake, California, to determine the valid temperature environment of ordnance stored in "explosive hazard magazines" located in the tropical areas of the Western Pacific.

It is expected that there will be sufficient interest generated among ordnance designers to warrant continued work in the study of storage temperatures in other areas of interest such as marine-induced arctic, etc. This is the second in a series of reports.

This work was supported by Task Assignment Number A33-536-711/216-1/F009-06-01.

This report has been reviewed for technical content by Warren W. Oshel.

Released by
CRILL MAPLES, Head,
Quality Assurance Division
15 May 1967

Under authority of
G. W. LEONARD, Head,
Propulsion Development Department

NOTS Technical Publication 4143, Part 2

Published by ..... Propulsion Development Department
Collation ..... Cover, 44 leaves, DD Form 1473, abstract cards
First printing ..... 375 unnumbered copies
Security classification ..... UNCLASSIFIED

CONTENTS

Figures:

Tables:

ACKNOWLEDGMENT

The authors are indebted to personnel at the U. S. Naval Ammunition Depot, Oahu, Hawaii; U. S. Naval Air Station, Barbers Point, Oahu, Hawaii; U. S. Naval Magazine, Guam; U. S. Naval Air Station, Agana, Guam; U. S. Naval Magazines, Subic Bay, Republic of the Philippines; and the U. S. Naval Station, Sangley Point, Republic of the Philippines, who provided the magazine temperature data, photographs, and other valuable information concerning storage magazines; also Mr. Jack L. Bateman for editing.

Special acknowledgment is due Ruth Massaro and Edna Vines, who have generated via computer equipment, the pertinent graphs and statistics presented in this report.

INTRODUCTION

Environmental temperature criteria are a major controlling factor in the design of all types of ordnance. However, the accepted temperature criteria, as set forth in Military Specifications, may be such that there are ordnance that actually meet the needs of our Naval services, and yet have failed over-strenuous qualification requirements. It is important then, that the actual temperature environment of ordnance be studied to substantiate existing temperature specifications or to revise the limitations in accordance with the findings.

SCOPE

This report covers a comparatively small area of the storage environment of explosive ordnance. Storage temperatures (data points) were obtained from Naval facilities located in the tropics of the Pacific in order to conduct preliminary studies of temperatures within storage magazines. These data points were obtained by the personnel at the Naval Ammunition Depot (NAD), Oahu, Hawaii; the Naval Air Station (NAS), Barbers Point, Oahu, Hawaii; the Naval Magazines, Guam; the Naval Air Station, Agana, Guam; the U. S. Naval Magazines, Subic Bay, Republic of the Philippines; and the U. S. Naval Station, Sangley Point, Republic of the Philippines, for use in their ammunition safety programs.

The data reported herein are comprised of the measured air temperatures inside the described structures only. Due to the difference in mass density between the air and the ordnance, the actual temperature of the ordnance will lag behind the air temperature fluctuations. Therefore, any temperatures herein reported can be treated as "conservative" relative to the actual temperature of the ordnance stored in these explosive hazard magazines.

BACKGROUND

This study of magazine temperatures is the second of the series which will cover worldwide storage magazine temperatures. The first part covered the desert regions of the Western United States. As is true with temperature data from storage magazines from the desert, data from the tropics are available because of the requirements set forth in the Navy Bureau of Ordnance Publication, OP5, "Ammunition Ashore, Handling, Stowing and Shipping", which sets forth a definite requirement for the maintenance of magazine air maximum and minimum temperature records.

INSTRUMENTATION

The magazine temperature data were obtained through the use of "horseshoe" maximum and minimum mercury thermometers. These thermometers are equipped with steel "tattletale" devices that float on the mercury and remain at the highest and lowest temperature positions reached during the measurement period. The ordnancemen reset the tattletales with a magnet after reading the indicated maximum and minimum temperature for the measurement period. The manufacturers of the thermometers (Taylor, Weksler, and Moeller) warrant that the temperature readings are accurate to within 2 °F at time of delivery to the Navy. These thermometers are mounted on the inside forward face of the back wall of the explosive hazard magazines at about eye level (standard procedure).

The nonstandard magazines may not allow the placement of the thermometers at the usual locations within the magazines. Thermometers have been occasionally observed to be mounted on boards and situated for convenience even in "standard" types of magazines.

METHOD OF DATA RETRIEVAL AND REDUCTION

All available storage magazine temperature data from the NAD, Oahu, Hawaii; the NAS, Oahu, Hawaii; the Naval Magazines, Guam; the NAS, Agana, Guam; the Naval Magazines, Subic Bay, Republic of the Philippines; and the Naval Station, Sangley Point, Republic of the Philippines; were collected and sent to the Analysis Branch, Propulsion Development Department at NOTS. The raw data were reduced to meaningful statistics. The significant points of interest for each location were tabulated. These were (1) the number of temperature measurements collected, (2) the number of measured temperatures exceeding 90 °F for each month, and (3) the average maximum and the average minimum temperature for each month.

The raw data input consisted of summary sheets of the maximum and minimum temperatures organized by magazine area, magazine type and the date of the readings. The information on the summary sheets was transferred to IBM punchcards. A computer was then used to reduce the information into the statistics previously mentioned. The steps by which the raw data were processed are explained in detail in Appendix A.

RESULTS

A summarization of all the data points exceeding 90°F and 100°F from both earth-covered and non-earth-covered tropically located explosive hazard magazines is presented in Table 1.

The results presented in Table 1 give an indication of temperatures to be expected in explosive hazard magazines in the tropics. It must be remembered, however, that the apparent differences in temperature between locations is to some extent due to the construction of the individual storage magazines. It should also be noted that the average earth-covered magazine air temperatures for some months are higher than those recorded for non-earth-covered magazines. This is due to the differences in construction, size, deployment of the magazines, and the location of the thermometers within the earth-covered magazines. A description of the magazine classifications pertinent to this report is given in Appendix B.

The average maximum and minimum temperatures of each month for the six magazine sites are shown in Fig. 1 through 12. Figures 1, 3, 5, 7, 9, and 11 are the data reported from earth-covered explosive hazard magazines at the various locations. Figures 2, 4, 6, 8, 10, and 12 present the data reported from the non-earth-covered buildings and temporary shelters at the candidate storage sites. The upper lines in Fig. 1 through 12 represent the monthly observed average maximums and the lower lines represent the observed average minimum.

Figures 1 and 2 include the years 1960 through 1966, for NAD, Oahu, Hawaii. The data were not available for the month of November 1962. However, it is probable that the missing data could be "interpolated" with a high degree of assurance when the subsequent months of November are consulted. It is indicated by Fig. 1 and 2 that the earth-covered magazines at NAD, Oahu, Hawaii are so constructed that there is a more constant temperature within their interiors than in those that are non-earth-covered. Non-earth-covered magazine air temperature are more affected by outside ambient air temperature changes.

The time spans and data sources included in Fig. 3 through 12 are as follows:

Figure	Time span	Data source
3-4	1965-1966	NAS, Barbers Point, Oahu, Hawaii
5	Aug. 1963-Nov. 1966	Naval Magazines, Guam
6	Oct. 1963-Nov. 1966	Naval Magazines, Guam
7	April 1963-Dec. 1966	NAS, Agana, Guam
8	Jan. 1964-Nov. 1966	NAS, Agana, Guam
9	Jan. 1962-Dec. 1966	Naval Magazines, Subic Bay
10	Jan. 1962-Dec. 1964	Naval Magazines, Subic Bay
11	Feb. 1965-Dec. 1966	NAS, Sangley Point
12	Feb. 1965-June 1966	NAS, Sangley Point

TABLE 1. Data Summary ion and Magazine Type.

Storage locations	Magazine type	Years[a]	N[b]	Number of maximum temperatures equal to or greater than		Maximum recorded temperature
				90°F	100°F	
Naval Ammunition Depot, Oahu, Hawaii	Earth-covered	6	39,155	128	0	98
	Non-earth-covered	6	7,165	2,203	0	99
Naval Air Station, Barbers Point, Oahu, Hawaii	Earth-covered	2	2,146	95	3	101
	Non-earth-covered	2	2,837	141	1	100
Naval Magazines, Guam	Earth-covered	3	6,739	35	0	98
	Non-earth-covered	3	679	471	79	104
Naval Air Station, Agana, Guam	Earth-covered	3	6,518	416	8	108
	Non-earth-covered	2	2,421	311	1	105
Naval Magazines, Republic of the Philippines	Earth-covered	5	9,100	661	1	100
	Non-earth-covered	2	140	69	56	110
Naval Station, Sangley Point, Republic of the Philippines	Earth-covered	1	3,479	476	1	101
	Non-earth-covered	1	383	8	0	98

[a] Length of time in complete calendar years.

[b] Number of data points represented in the sampling.

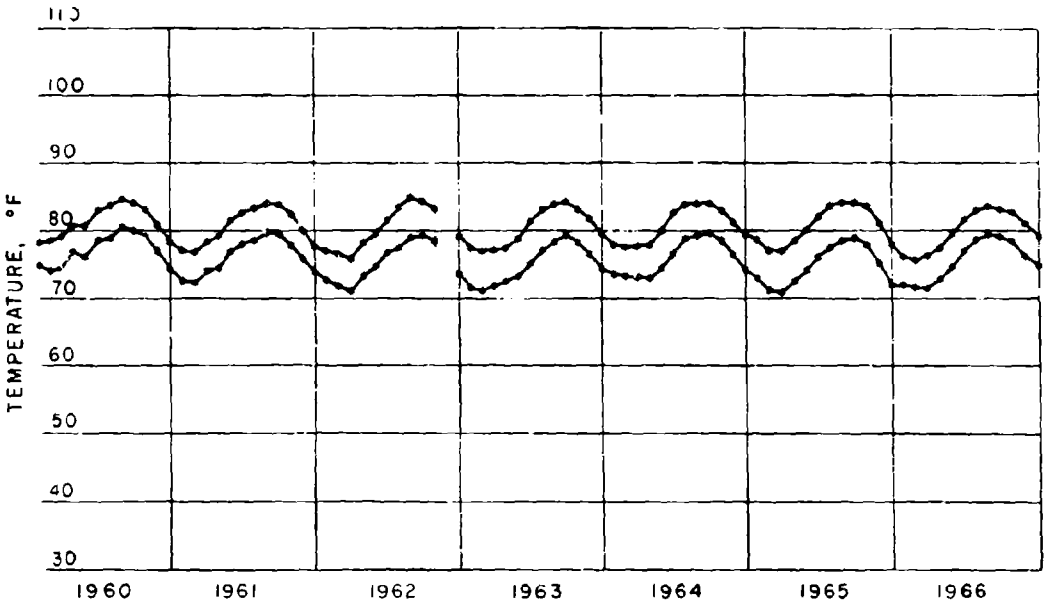

FIG. 1. Average Minimum and Average Maximum Temperatures of Earth-Covered Magazines at NAD, Oahu, Hawaii.

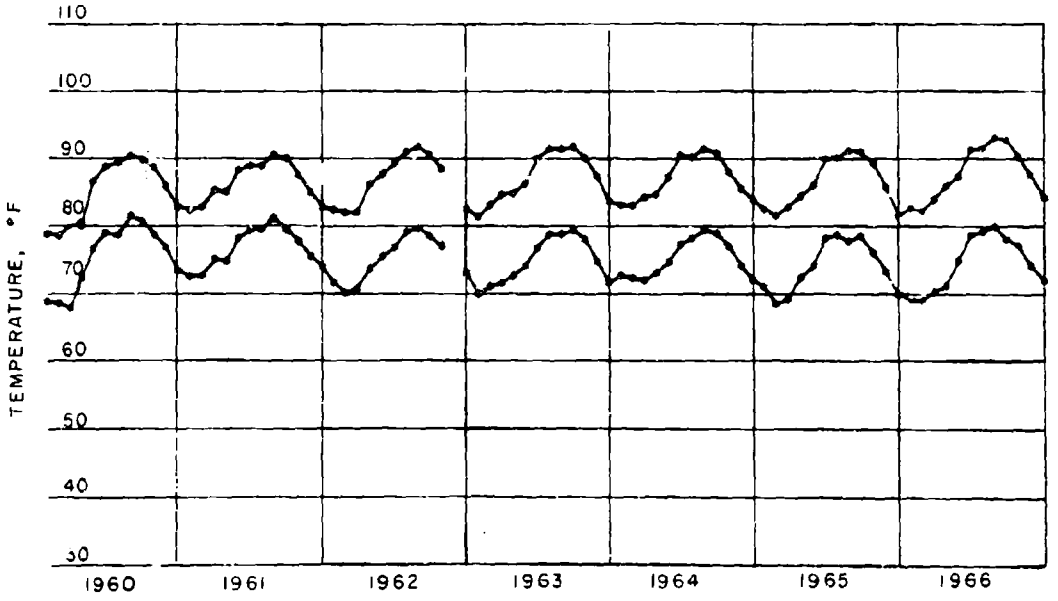

FIG. 2. Average Minimum and Average Maximum Temperatures for Non-Earth-Covered Magazines at NAD, Oahu, Hawaii.

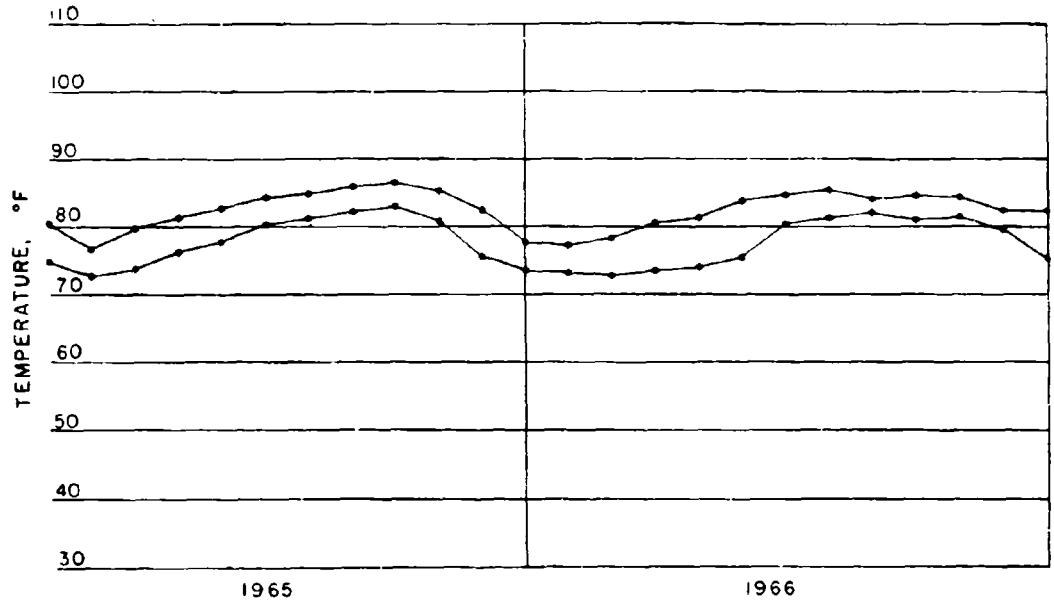

FIG. 3. Average Maximum and Average Minimum Temperatures of Earth-Covered Magazines at NAS, Barbers Point, Hawaii.

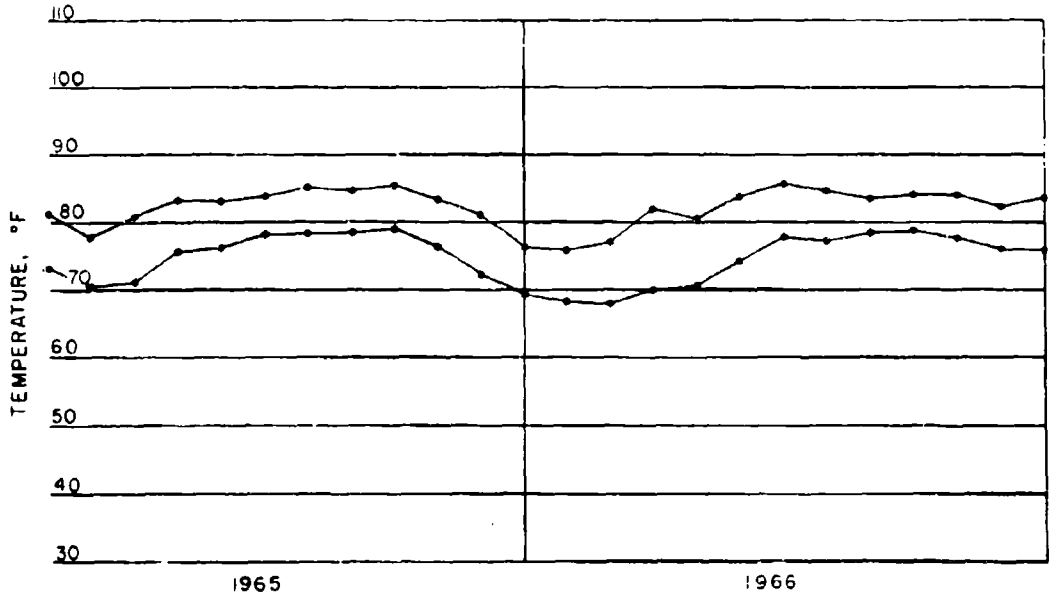

FIG. 4. Average Maximum and Average Minimum Temperatures for Non-Earth-Covered Magazines at NAS, Barbers Point, Hawaii.

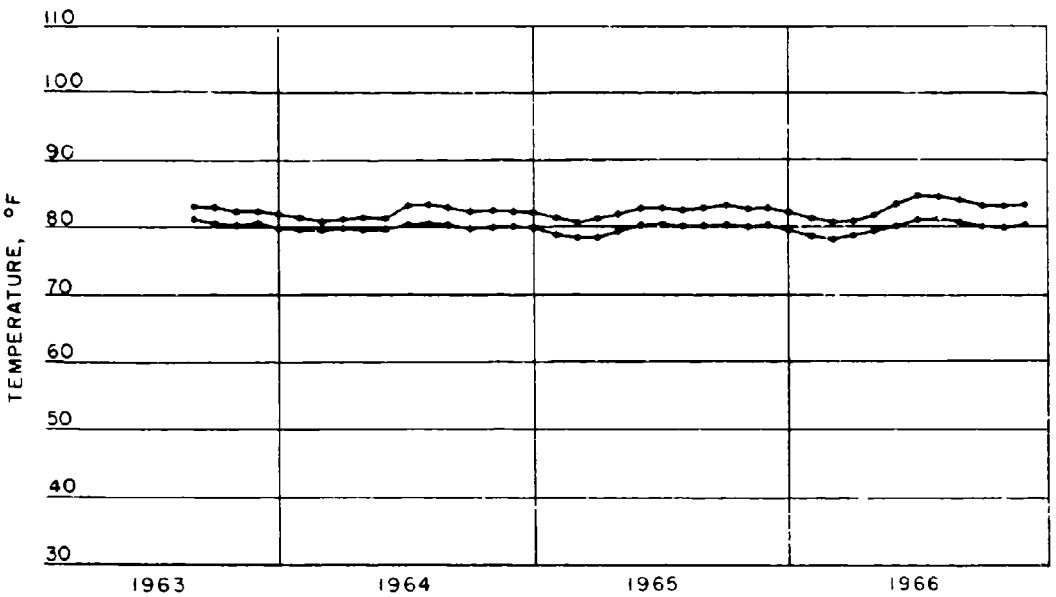

FIG. 5. Average Maximum and Average Minimum Temperatures of Earth-Covered Magazines at the Naval Magazines, Guam.

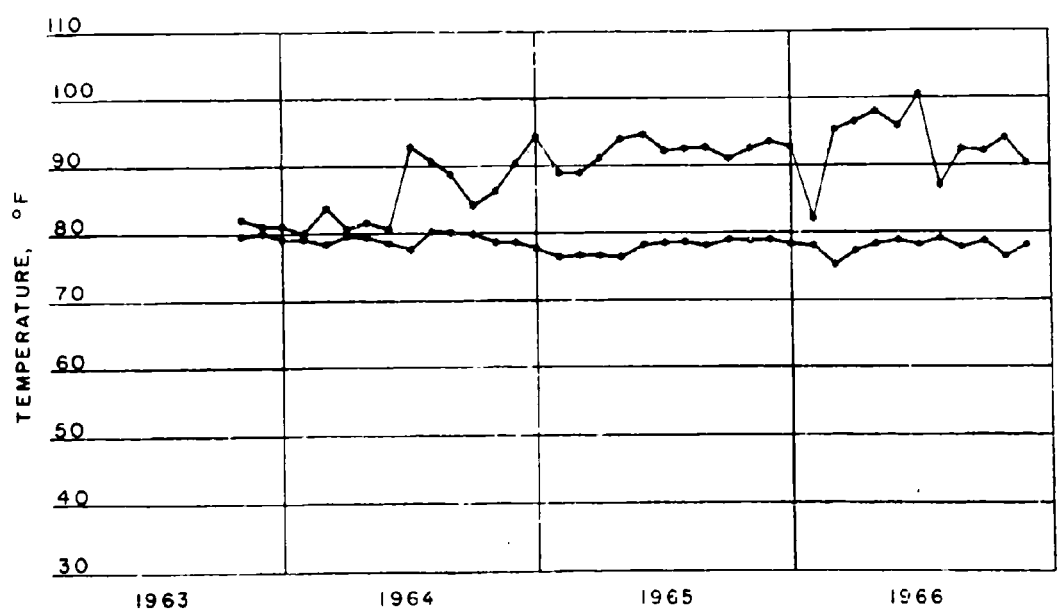

FIG. 6. Average Maximum and Average Minimum Temperatures of Non-Earth-Covered Magazines at the Naval Magazines, Guam.

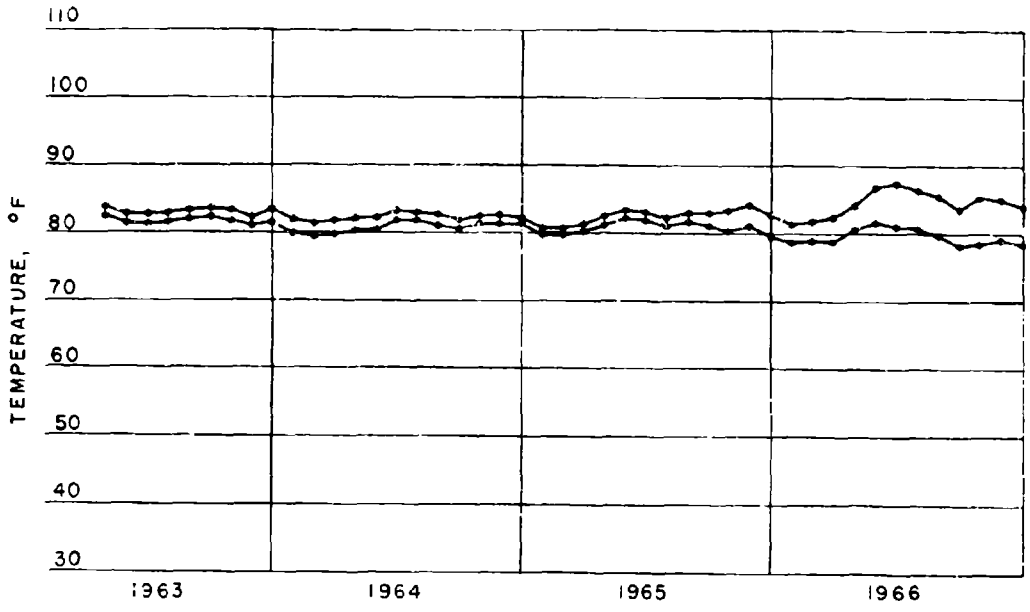

FIG. 7. Average Minimum and Average Maximum Temperatures of Earth-Covered Magazines at NAS, Agana, Guam.

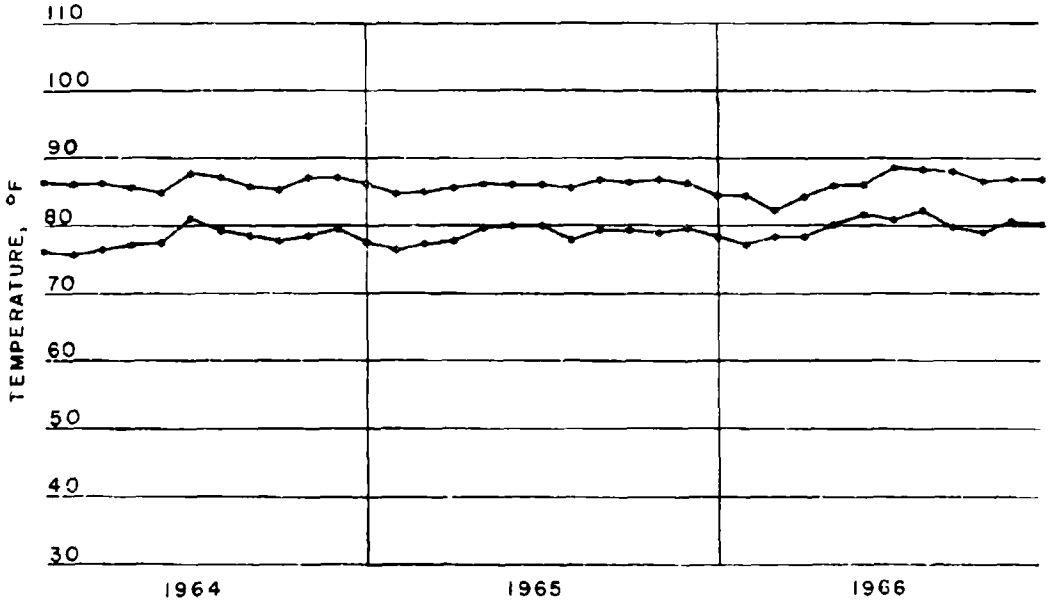

FIG. 8. Average Minimum and Average Maximum Temperatures of Non-Earth-Covered Magazines at NAS, Agana, Guam.

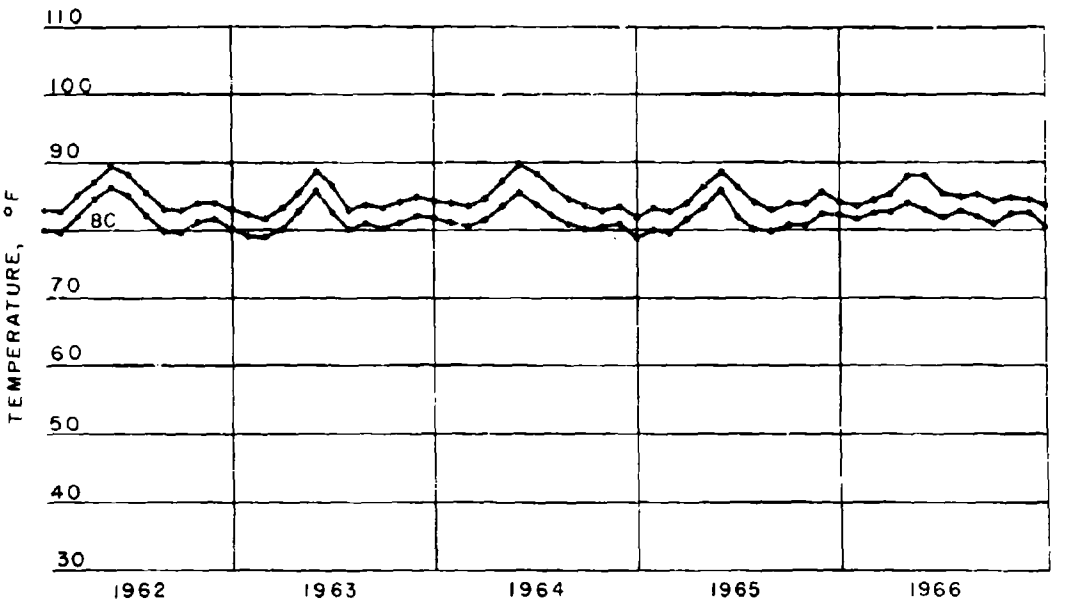

FIG. 9. Average Minimum and Average Maximum Temperatures of Earth-Covered Magazines at the U. S. Naval Magazines, Subic Bay, Republic of the Philippines.

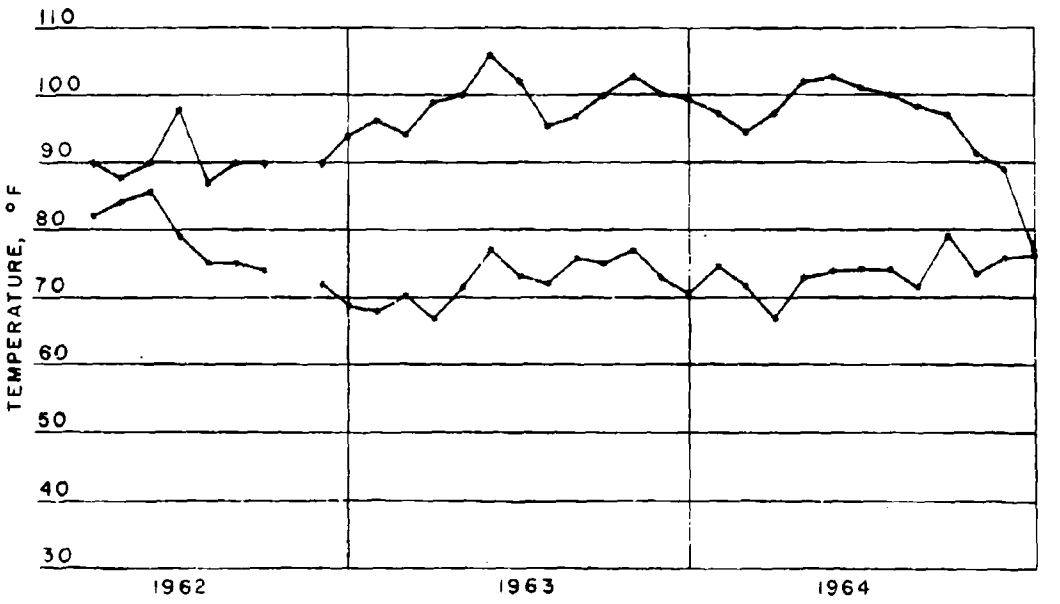

FIG. 10. Average Minimum and Average Maximum Temperatures of Non-Earth-Covered Magazines at the U. S. Naval Magazines, Subic Bay, Republic of the Philippines.

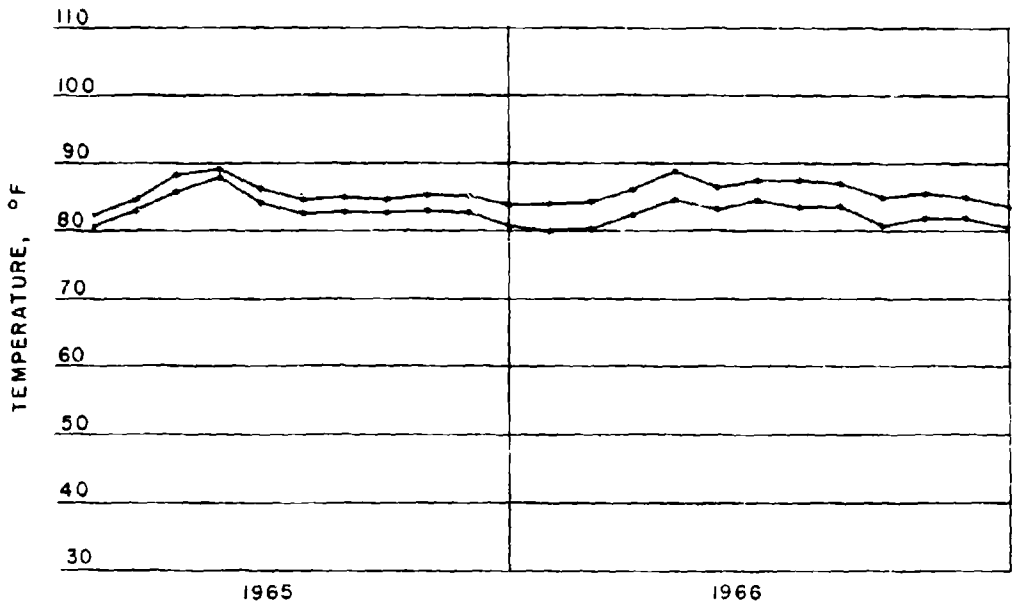

FIG. 11. Average Minimum and Average Maximum Temperatures of Earth-Covered Magazines at the U. S. Naval Air Station, Sangley Point, Republic of the Philippines.

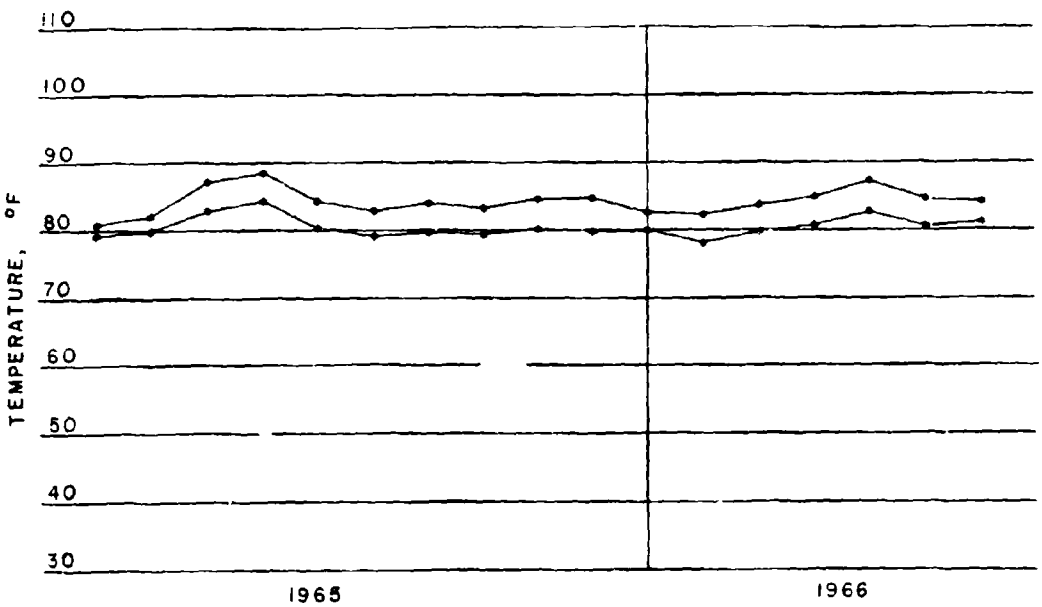

FIG. 12. Average Maximum and Average Minimum Temperatures of Non-Earth-Covered Magazines at the U. S. Naval Air Station, Sangley Point, Republic of the Philippines.

The non-earth-covered magazine air temperature record shown in Fig. 6 varies considerably, which is in contrast with the earth-covered magazine air temperature plot shown in Fig. 5. The reason is that the temperature records from the same magazines have not been reported for each month; therefore, the sample is a variable and the number of data points for each month is not a constant. The general trend of non-earth-covered magazine air temperatures seems to indicate a lack of stability. More data are necessary to define this trend.

A comparison of Fig. 5 with Fig. 7 indicates an overall stability of temperatures. The reason for the temperature change at NAS, Agana, Guam (Fig. 7) is not apparent. The difference may have been due to ambient temperature change but more likely was caused by the increased activity within the magazines brought about by the situation in Viet Nam. Figure 8 is indicative of the air temperature excursion to be expected in non-earth-covered ammunition storage structures at Guam.

The increase of solar radiation as the sun reaches the overhead position in April of each yearly cycle is clearly evident in Fig. 9. The rains come to negate this trend throughout the "summer". The rest of the year seems to moderate generally from the "springtime" peak. At the latitude in which Subic Bay is located, the usual summer extreme pattern is bicuspidate. The first hot spell occurs during April and May, as indicated in Fig. 9. The second cusp is experienced when the rains cease in late September, October, and early November. Traces of this second cusp are evident in Fig. 9.

The erratic surface temperature plot of Fig. 10 is due to the disparity in the type of non-earth-covered magazines and the number of measurements being taken during each month at Subic Bay (see Appendix C). This information is included only because of the vast amount of material stored in non-earth-covered structures at this time. It is hoped that more data will indicate the air temperature trend more fully. It should be noted that the maximum point in the maximum mean air temperature plot is comprised of one measurement of 106°F. More data will place this value more firmly in context.

Figures 11 and 12 appear to closely resemble each other for comparable temperature measurement periods and exhibit the same general temperature patterns as that seen in Fig. 9.

The data from which the plots of Fig. 1 through 12 were taken are included in Appendix C. These data include the number of measured points from which the averages and the standard deviations were computed. The importance of reporting these data and the implications arising therefrom are discussed in Appendix D.

CONCLUSIONS

It has been found that the type of storage structure determines, to some extent, the storage temperatures. The temperature differences are, however, such that further detailed study of structure effects on enclosed air temperatures is not warranted at the present time. Even the maximum air temperature of 110°F recorded in the non-earth-covered OS type shelter located at the U. S. Naval Magazines, Subic Bay, Republic of the Philippines, is nowhere near the existing storage specification requirement temperature of 165°F.

Parts 1 and 2 of this report have to a large degree statistically established that the maximum storage specification air temperature of 165°F is not to be found in the "explosive hazard magazines" located in either the hot desert or the tropics.

Assuming that the data are representative of the enclosed air temperatures encountered in the explosive hazard magazines located in the tropics, the results of this study indicate that ordnance, explosives, propellants, pyrotechnics, etc. stored in these magazines will probably never be subjected to temperatures exceeding 115°F.

RECOMMENDATIONS

This report does not cover the minimum 11-year period of one solar cycle required to provide a thorough representation of the storage temperatures in the tropics. Therefore, these reports, Parts 1 and 2 of Storage Magazine Temperatures, should be used as a basis for the continuation of this program.

These reports on storage magazine enclosed air temperatures and oncoming similar reports should be used as a basis for the updating of the storage temperature requirements of the Military Specifications to which ordnance are designed.

It is also recommended that as significantly more data become available, this work be revised so that the trends become more obvious to the designer of new ordnance. (See Appendix D.)

Appendix A

DATA HANDLING

The procedure for handling the storage temperature data is as follows:

Step 1. The applicable data are keypunched onto IBM type cards from the temperature summary sheets as received from the ammunition storage facility as shown in Table 2.

TABLE 2. Punchcard Data.

	Month	Day	Year	Type of magazine	Temp. reading		Storage location
					Low	High	
Example	12	01	66	1WT1	74	78	NAD, Oahu, Hawaii
Card column	3 ——— 8			18-26	36-38	42-44	55-79

Step 2. The punched cards (step 1) are sorted in the following manner.

a. Storage location: NAD, Oahu, Hawaii; NAS, Oahu, Hawaii; Naval Magazines, Guam; NAS, Agana, Guam; Naval Magazines, Republic of the Philippines; Naval Station, Sangley Point, Republic of the Philippines.

b. Each group of cards by location into calendar sequence by:

(1) Year
(2) Month
(3) Day

Step 3. The "input deck" consists of: (1) Univac 1108 computer program (420052), (2) the sorted cards from step 2, and (3) a "total card" with the number of months of data included in columns 4 and 5. The computer program, 420052, computes the averages and standard deviations of maximum and minimum temperatures of each month.

Step 4. The resulting output from step 3 consists of the output deck with averages and standard deviations of maximum and minimum temperatures punched in the cards as shown in Fig. 13. Microfilm

containing data for each month, as sorted in step 2, are processed by the computer. Figure 14 is a photographic reproduction of a typical microfilm.

Step 5. The output deck created in step 4 is reproduced on aperture cards. The microfilm of step 4 is cut into segments and mounted on an aperture card as shown in Fig. 15.

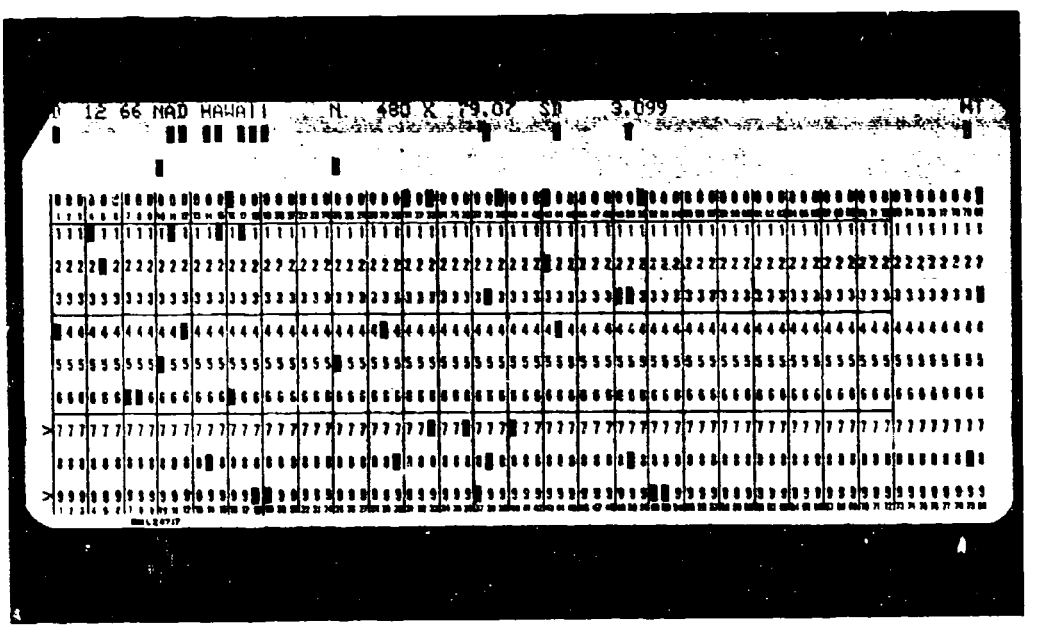

FIG. 13. Typical Data Card.

Step 6. The output deck is assembled with another Univac 1108 computer program (420053) and fed into the computer. The output from the computer is a curve such as that illustrated in Fig. 1 which plots the average maximum and minimum temperatures for the effective dates of the output deck knowledge. The microfilm of this curve is also mounted on an aperture card.

HIGH TEMPERATURES

DATE = 12 66 LOCATION = 1

N = 480 MEAN = 79.07 STANDARD DEVIATION = 3.099

78.	78.	79.	78.	78.	80.	81.	79.	78.	81.	82.	83.	84.	80.	81.	84.	86.	79.	78.
76.	76.	77.	75.	78.	78.	76.	83.	79.	82.	81.	82.	84.	83.	83.	79.	79.	80.	78.
82.	82.	80.	84.	78.	76.	77.	76.	75.	75.	79.	78.	81.	80.	81.	78.	81.	82.	81.
80.	83.	84.	84.	76.	82.	82.	81.	80.	80.	77.	76.	75.	76.	78.	78.	78.	77.	81.
77.	82.	84.	81.	81.	84.	81.	82.	80.	84.	80.	80.	83.	81.	78.	76.	77.	75.	78.
79.	79.	80.	79.	78.	79.	80.	95.	83.	83.	79.	79.	81.	80.	79.	78.	76.	75.	78.
76.	78.	76.	77.	79.	79.	77.	78.	30.	82.	77.	79.	81.	81.	82.	83.	83.	83.	80.
80.	83.	82.	78.	76.	76.	78.	74.	75.	76.	78.	78.	78.	77.	77.	85.	81.	79.	7?.
79.	82.	79.	79.	83.	83.	79.	81.	82.	80.	80.	84.	76.	78.	76.	75.	75.	74.	78.
78.	77.	81.	78.	83.	82.	81.	83.	85.	84.	79.	79.	84.	85.	81.	80.	80.	78.	77.
78.	74.	78.	77.	79.	78.	81.	80.	80.	82.	78.	81.	81.	85.	82.	83.	81.	78.	78.
78.	78.	78.	78.	77.	80.	77.	79.	79.	82.	80.	79.	78.	86.	79.	84.	81.	83.	81.
82.	79.	78.	75.	77.	78.	75.	78.	77.	78.	78.	78.	80.	81.	78.	78.	79.	80.	80.
83.	84.	78.	80.	84.	87.	84.	78.	78.	75.	78.	78.	79.	78.	78.	78.	81.	79.	78.
80.	79.	83.	83.	83.	78.	80.	82.	84.	80.	80.	78.	78.	78.	77.	74.	75.	75.	79.
78.	77.	78.	77.	82.	79.	79.	82.	83.	82.	80.	77.	77.	82.	81.	81.	79.	78.	78.
77.	78.	78.	77.	77.	78.	75.	75.	75.	71.	78.	77.	77.	78.	80.	77.	78.	80.	80.
80.	81.	78.	78.	77.	79.	80.	81.	80.	81.	79.	75.	77.	78.	78.	78.	78.	79.	77.
77.	78.	78.	80.	82.	81.	85.	85.	80.	78.	78.	75.	75.	75.	78.	75.	77.	78.	78.
77.	75.	79.	78.	77.	80.	79.	80.	85.	86.	90.	80.	77.	80.	79.	82.	87.	85.	80.
78.	75.	75.	79.	75.	79.	79.	81.	78.	77.	81.	81.	81.	79.	79.	79.	85.	84.	80.
82.	78.	82.	86.	78.	78.	78.	75.	74.	78.	75.	85.	82.	85.	81.	86.	80.	83.	87.
72.	78.	75.	78.	75.	80.	77.	83.	78.	82.	80.	82.	82.	81.	77.	78.	78.	75.	75.
78.	81.	78.	75.	77.	82.	78.	79.	79.	80.	81.	78.	79.	81.	81.				

FIG. 14. Typical Microfilm Data.

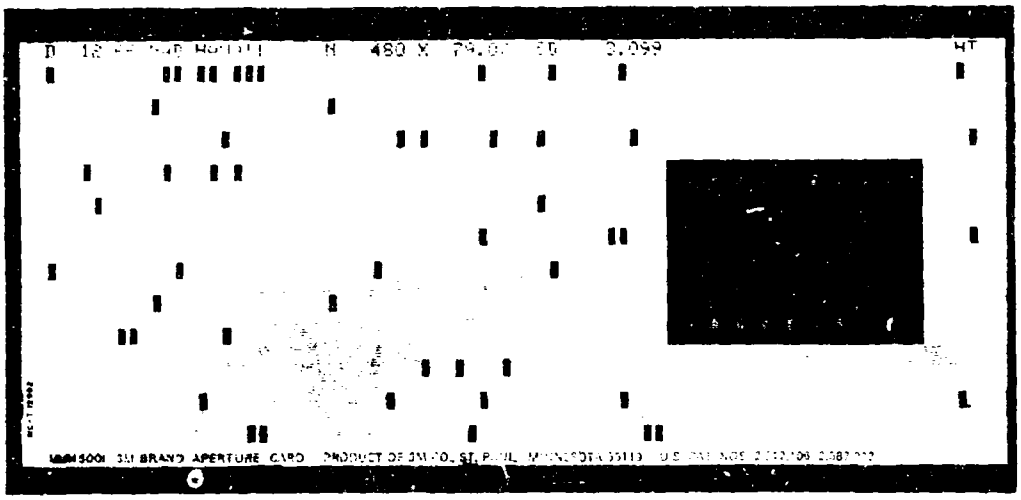

FIG. 15. Aperture Card With Microfilm Insert.

Appendix B

CLASSIFICATION OF MAGAZINES

Storage magazines differ in construction and deployment for the type of ammunition that is to be stowed. The storage magazines from which the temperature data have been collected differ greatly in their classification range from "explosive hazard magazines" to storehouses. Their construction, labeling, maintenance, etc., and the frequency at which temperature measurements were taken are in accordance with Ammunition Ashore Handling, Stowing, and Shipping, OP5, Vol. 1, second revision. The letter designations exactly as established by OP5 are presented in Table 3, so that the reader will have no difficulty in distinguishing between types of magazines that are found at the specified locations in the tropics.

In order to indicate the type of magazine, OP5 requires that the [illegible]s added if the magazine is earth covered and barricaded; the letter C is added if the magazine is earth covered but the door is not barricaded; and the letter S is added if the magazine is not earth covered but is barricaded.

TABLE 3. Construction, Use, and Capacities.

L to N inclusive and SC and Y Fire Hazard--Powder (Bulk, Semi-fixed or Bag Ammunition), Pyrotechnics, Ignition Fuzes and Primers, Small Arms, Smoke Drums, Chemical Ammunition.

DIMENSIONS (nominal)	NORMAL EXPLOSIVE LIMIT	LETTER DESIGNATOR
50' x 100' ----------	500,000 lbs -------	L
25' x 80' triple arch	500,000 lbs -------	L
52' dome (Corbetta type)	500,000 lbs -------	D
50' x 60' ----------	300,000 lbs -------	M
30' x 50' ----------	125,000 lbs -------	N
25' x 48' ----------	125,000 lbs -------	N
25' x 40' ----------	125,000 lbs -------	N
Miscellaneous or non-standard size	Dependent upon location, size, and construction	Y

TABLE 3. (Cont.)

P and Z Missile Hazard--Projectile and Fixed Ammunition.

DIMENSIONS (nominal)	MAXIMUM EXPLOSIVE LIMIT	LETTER DESIGNATOR
50' x 100' ----------	143,000 lbs --------	P
25' x 80' triple arch	143,000 lbs (total for three arches)	P
52' dome (Corbetta type)	143,000 lbs --------	D
Miscellaneous or non-standard size	143,000 lbs --------	Z

A to K inclusive and W and X Explosion Hazard--High Explosive (Bulk, Depth Charges, Mines, Warheads, Bombs, etc.) Fuzes, Detonators, Exploders, Black Powder.

DIMENSIONS (nominal)	NORMAL USE	NORMAL EXPLOSIVE LIMIT	LETTER DESIG-NATOR
25' x 80' arch type (igloo)	High explosives	250,000 lbs	A
25' x 50' arch type (igloo)	High explosives	143,000 lbs	B
25' x 40' arch type (igloo)	High explosives	143,000 lbs	B
39' x 44' or 32' x 44 (warhead type)	High explosives	250,000 lbs	W
12' x 17' (box type)	Black powder	20,000 lbs	E
Miscellaneous or non-standard size	High explosives	Dependent upon size, location, and construction	X
25' x 20' arch type (igloo)	Fuze and detonator	70,000 lbs	F
Dimensions vary (gallery or tunnel type)	High Explosives	250,000 lbs	G

TABLE 3. (Contd.)

DIMENSIONS (nominal)	NORMAL USE	NORMAL EXPLOSIVE LIMIT	LETTER DESIG-NATOR
10' x 14'	Fuze and detonator	15,000 lbs	H
10' x 7'	Fuze and detonator	7,500 lbs	H
6' x 8'8" (keyport type)	High explosives	4,000 lbs	K

DIMENSIONS (nominal)	TYPE	LETTER DESIGNATOR
25' x 68' ------	Smoke drum type ---	SD
25' x 34' ------	Smoke drum type ---	SD
25' x 51' ------	Smoke drum type ---	SD
	All inert storehouses	SH

TYPE OF HAZARD	LETTER DESIGNATOR
Explosive hazard magazine	X
Fire hazard magazine	Y
Missile hazard magazine	Z

PHYSICAL APPEARANCE OF MAGAZINES

The number of magazines at each of the Western Pacific ordnance storage areas under consideration in this report is given in the following paragraphs. The types of magazines at each storage site are described using the "letter designator" system previously explained. A series of photographs (Fig. 16 through 46) is included following the text of this Appendix (B).

NAVAL AMMUNITION DEPOT, OAHU, HAWAII

There are approximately 311 storage magazines from which the temperature data were taken. Two hundred eighty-five magazines are earth covered with letter designations AT, ATX, BT, BTX, FT, EC, HT, PC, PT, WT and XT. Twenty-six magazines are surface magazines with letter designations L, N, SD, SH and Z. Typical magazines are shown in Fig. 16 through 23.

NAVAL AIR STATION, BARBERS POINT, HAWAII

There are 39 magazines from which temperature data were taken. Twenty-eight magazines are earth covered with letter designators HT, BC, BT, EC, YC and XC. Eleven are surface magazines with letter designators Y, L, Z and R. S. L. (Ready Service Lockers). Photographs of typical magazines are included in Fig. 24 through 28.

NAVAL MAGAZINES, GUAM

There are 224 magazines from which temperature data were taken. They are all earth covered with letter designations AT, AC, HT, XC, YC and ZC. Temperature measurements were also taken from ready service lockers. These lockers may be considered surface magazines as they are of similar construction. Photographic coverage of some typical magazines is given in Fig. 29 through 31.

NAVAL AIR STATION, AGANA, GUAM

There are 11 magazines from which temperature data were taken. Nine magazines are earth covered with letter designations XT, YC, and HT. Two magazines are surface magazines of concrete construction with multiple cubicles with a letter designation X. Typical magazines are shown in Fig. 32 through 35.

NAVAL MAGAZINES, SUBIC BAY, REPUBLIC OF THE PHILIPPINES

There are 222 magazines at Subic Bay from which temperature data were taken. One hundred forty-seven are earth covered with letter designations AT, XT, BT, FC, ZC, PC, and PT. There are 75 surface magazines with letter designations OS, Xs, F, and RX. Temperature measurements were taken from OS type magazines (outside storage) which range from no covering or tarpaulin covered, to sheds. Typical photographic coverage is given in Fig. 36 through 42. No temperatures have been recorded in the type of magazine shown in Fig. 40, however, it is considered that the temperatures are similar to those recorded in the OS type shelter. Temperature readings are not available from shelters such as shown in Fig. 41.

NAVAL STATION, SANGLEY POINT, REPUBLIC OF THE PHILIPPINES

There are 21 magazines from which temperature data were taken. Fifteen magazines are earth covered with letter designators, YTY, ZTX, BTY, XTX, XC, XCX, and YC. Six magazines are surface magazines with the letter designator X. The surface magazine temperature data has been discontinued since June 1966. Typical magazines at Sangley Point are shown in Fig. 43 through 46.

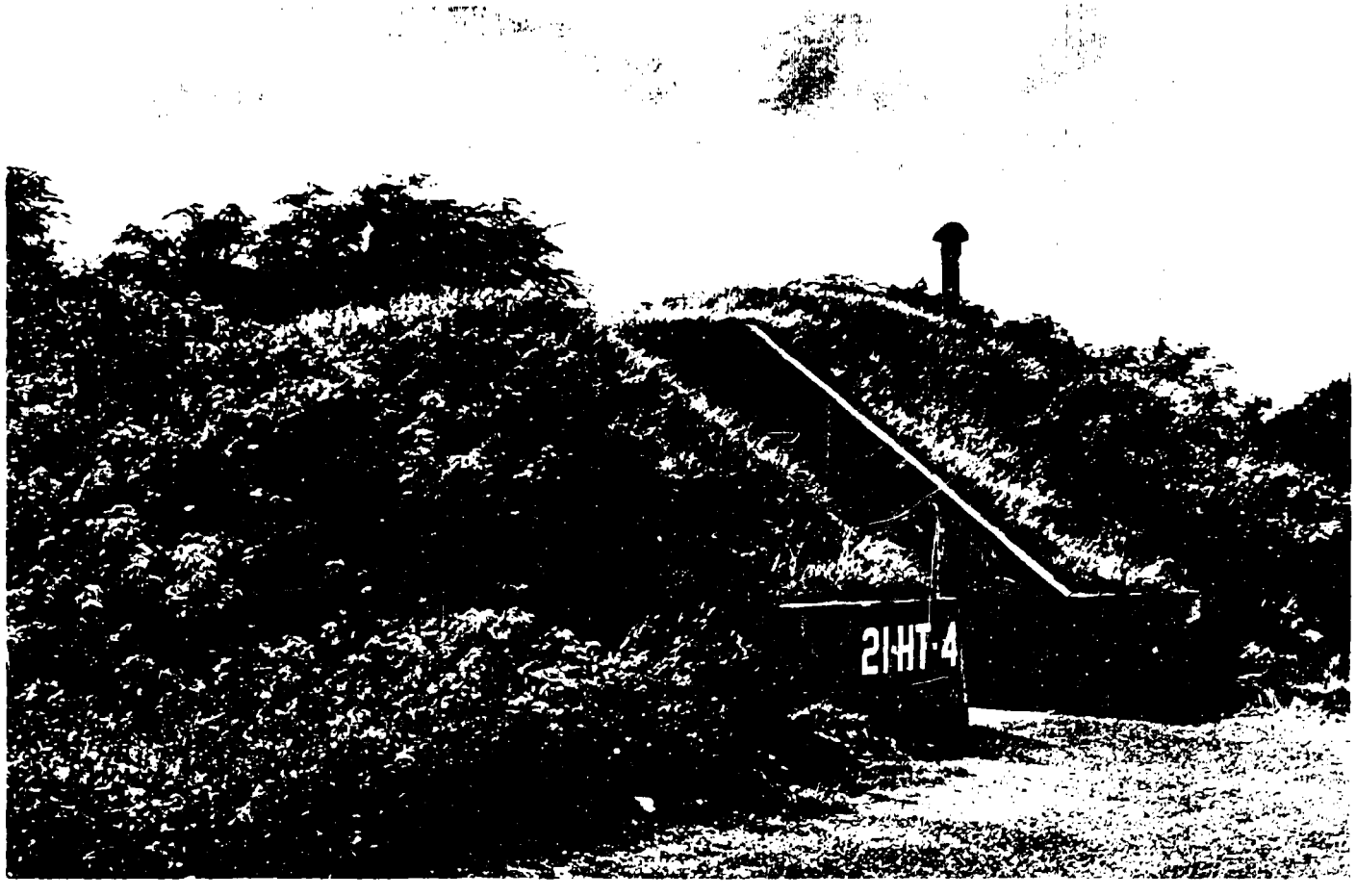

FIG. 16. Magazine 21HT4, Typical of the AT, BT, BTX, FT, HT, and WT Magazines of the Naval Ammunition Depot, Oahu, Hawaii.

FIG. 17. Magazine 10FT3, Typical of AT, BT, BTX, FT, HT, and WT Magazines at the Naval Ammunition Depot, Oahu, Hawaii.

FIG. 18. Magazine 13PC16, Typical of the PC Magazines at the Naval Ammunition Depot, Oahu, Hawaii.

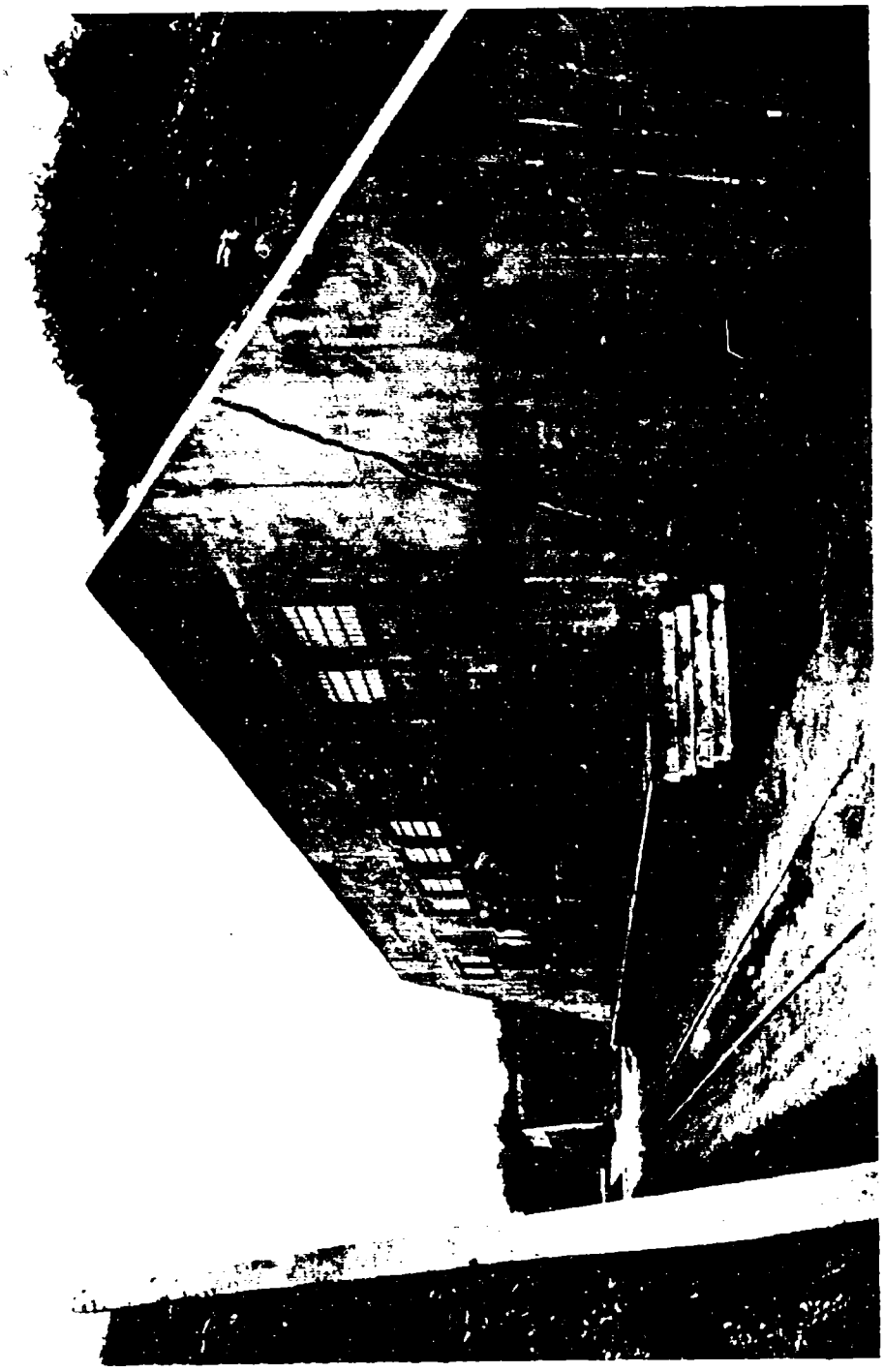

FIG. 19. Magazine 24PT3, Typical of the PT and XT Magazines at the Naval Ammunition Depot, Oahu, Hawaii.

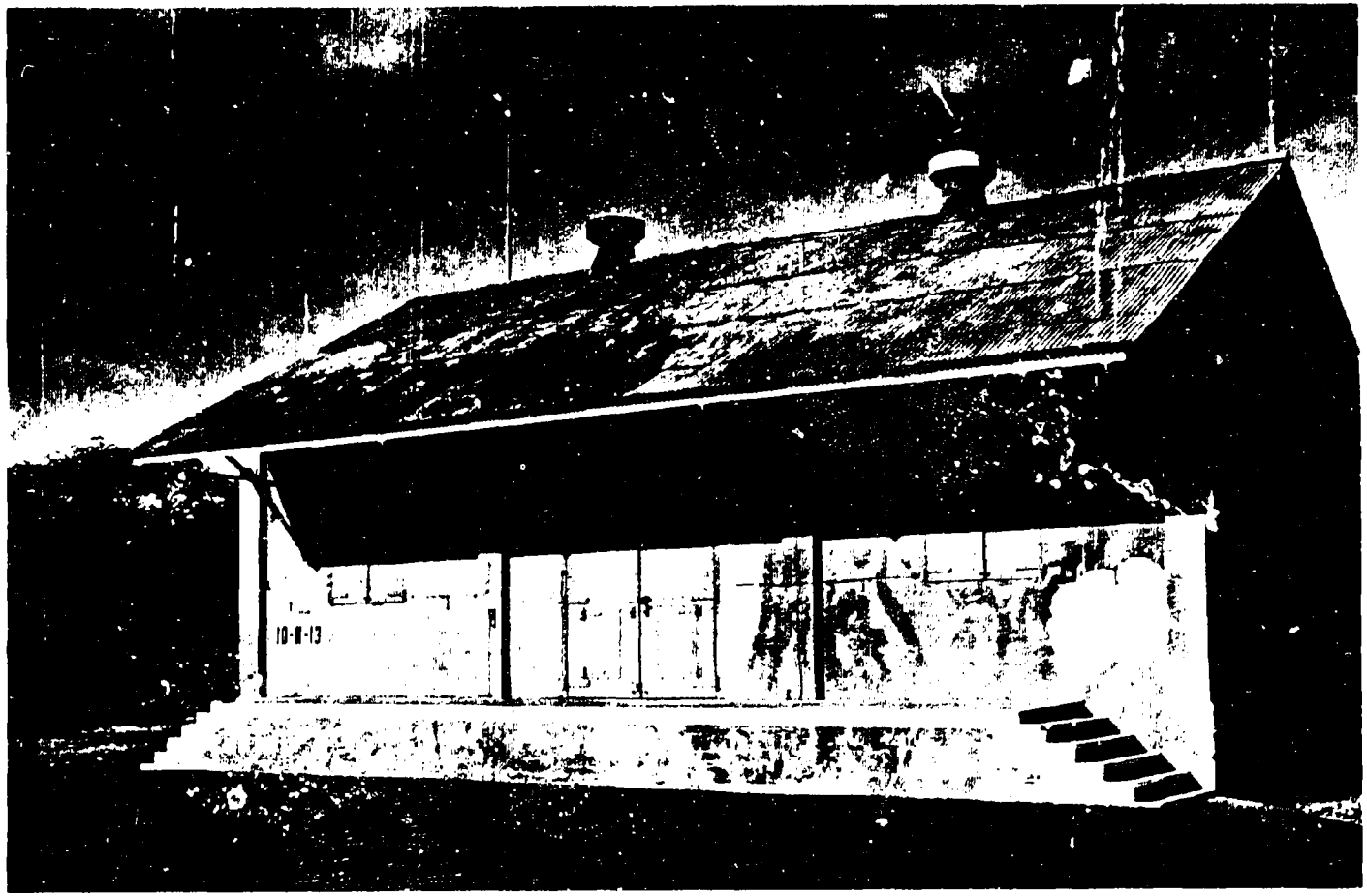

FIG. 20. Magazine 10N13, Typical of Some Permanent Non-Earth-Covered Storage L, SN, N, and Z Shelters at the Naval Ammunition Depot, Oahu, Hawaii.

FIG. 21. Storehouse 13SH5, Typical of Some Permanent Non-Earth-Covered SH Shelters at the Naval Ammunition Depot, Oahu, Hawaii.

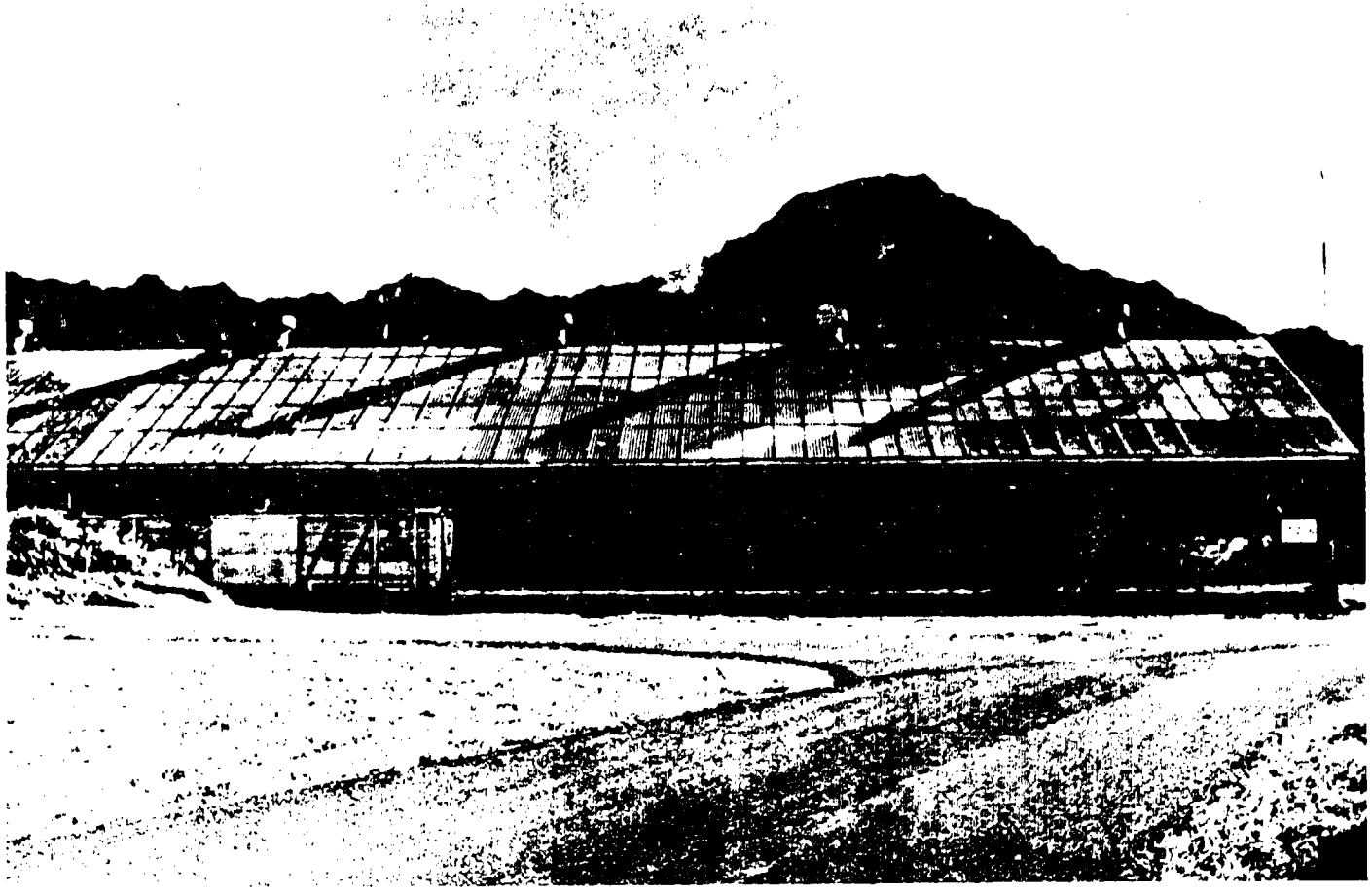

FIG. 22. Magazine 127.16, Typical of Permanent Non-Earth-Covered Z Shelters at the Naval Ammunition Depot, Oahu, Hawaii.

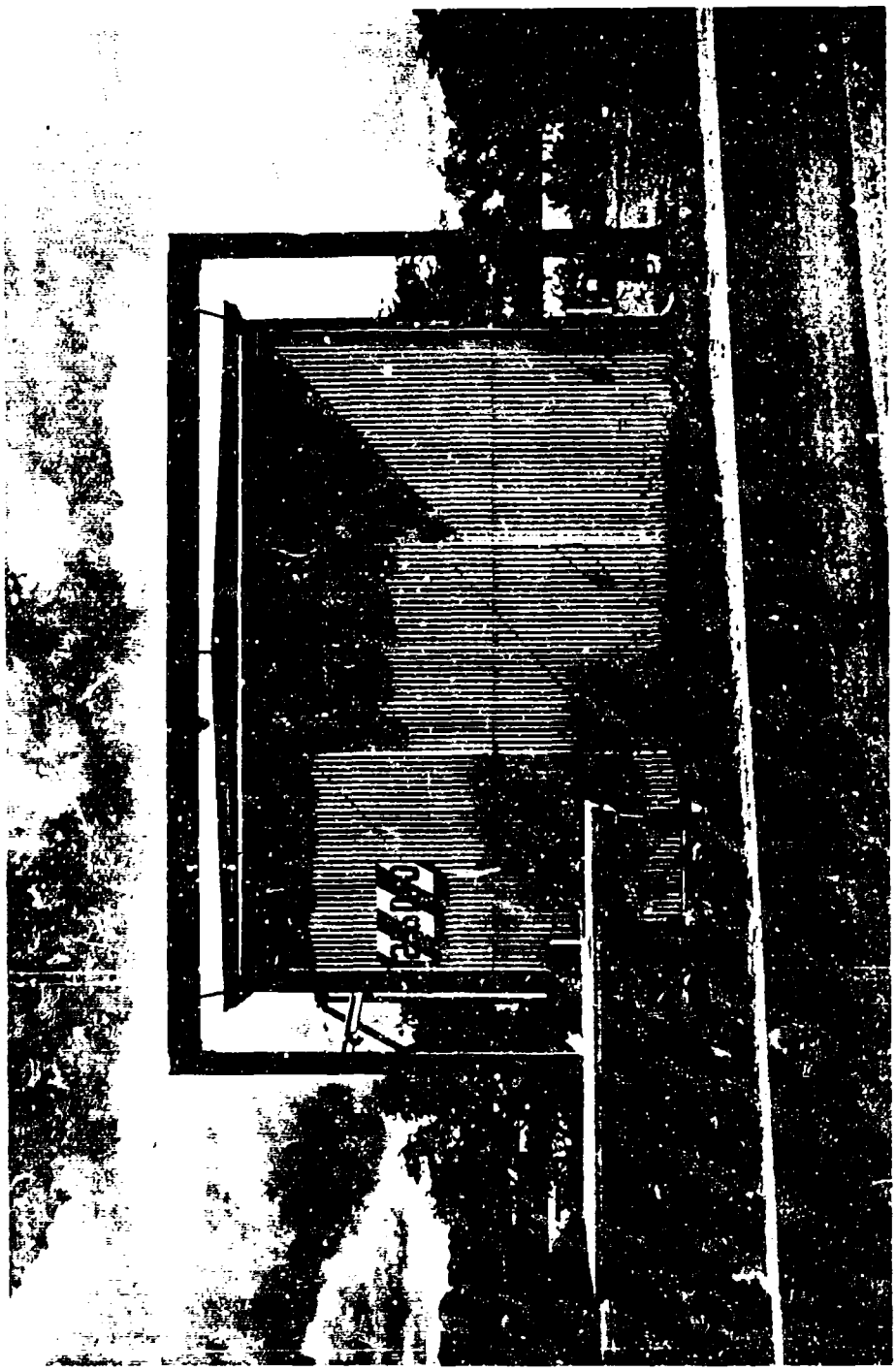

FIG. 23. Smoke Drum 21SD10, Typical of Some Non-Earth-Covered Shelters at the Naval Ammunition Depot, Oahu, Hawaii.

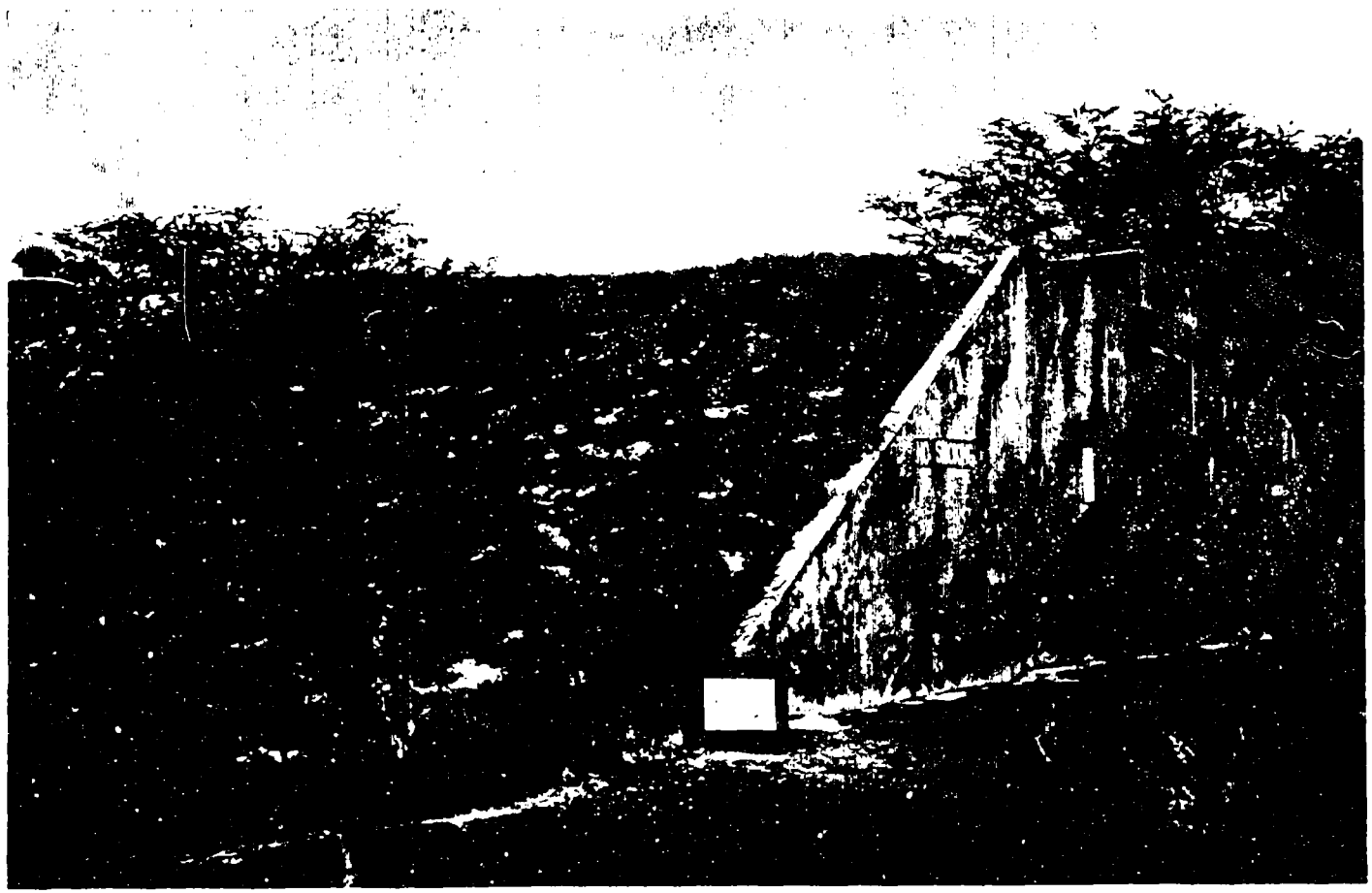

FIG. 24. Magazine 3BT2, Typical of the BT, BC, EC and YC Magazines at the Naval Air Station, Barbers Point, Oahu, Hawaii.

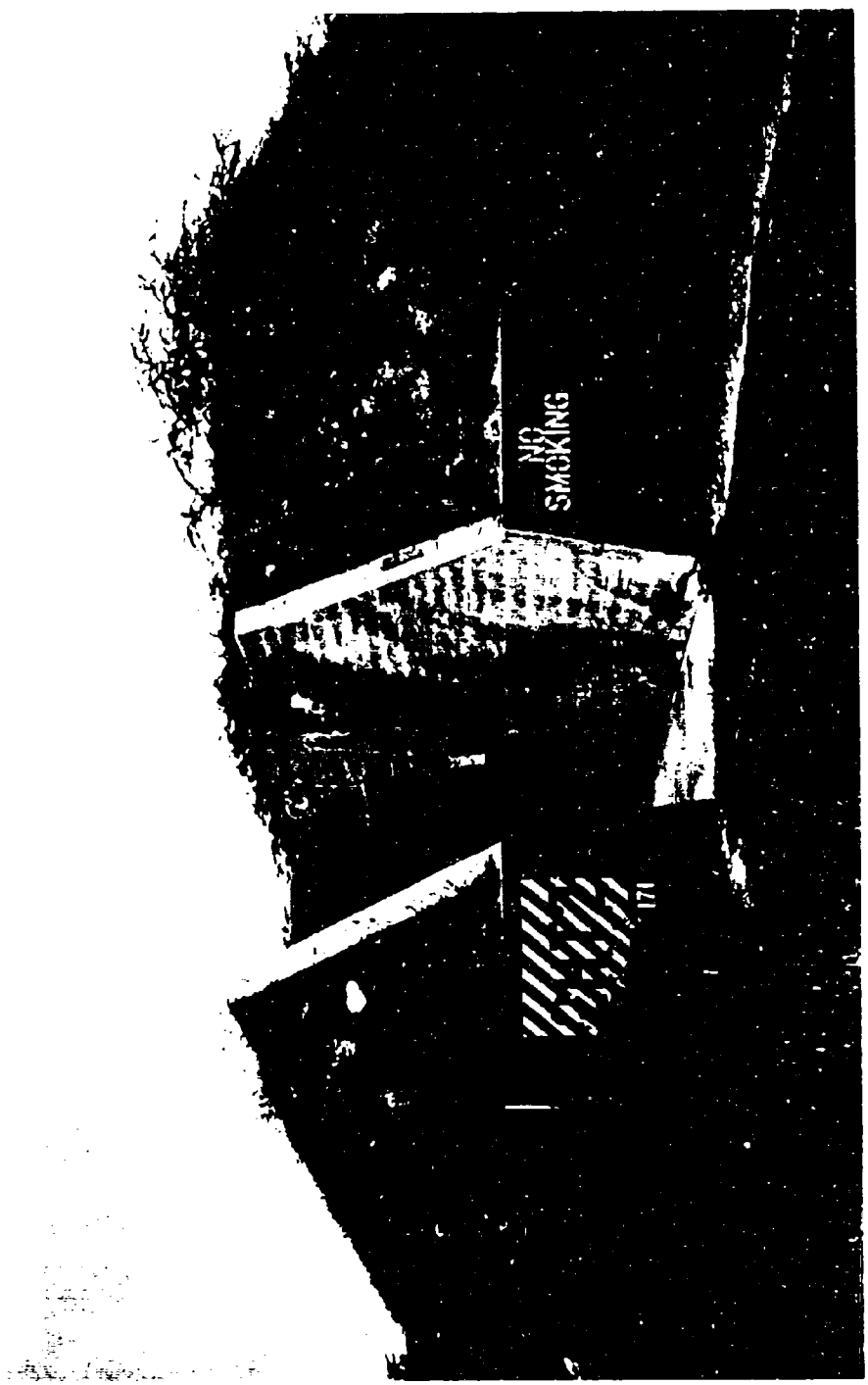

FIG. 25. Magazine 2HT2, Typical of the HT Magazines at the Naval Air Station, Barbers Point, Oahu, Hawaii.

FIG. 26. Magazine 6XC6, Typical of the XC Magazines at the Naval Air Station, Barbers Point, Oahu, Hawaii.

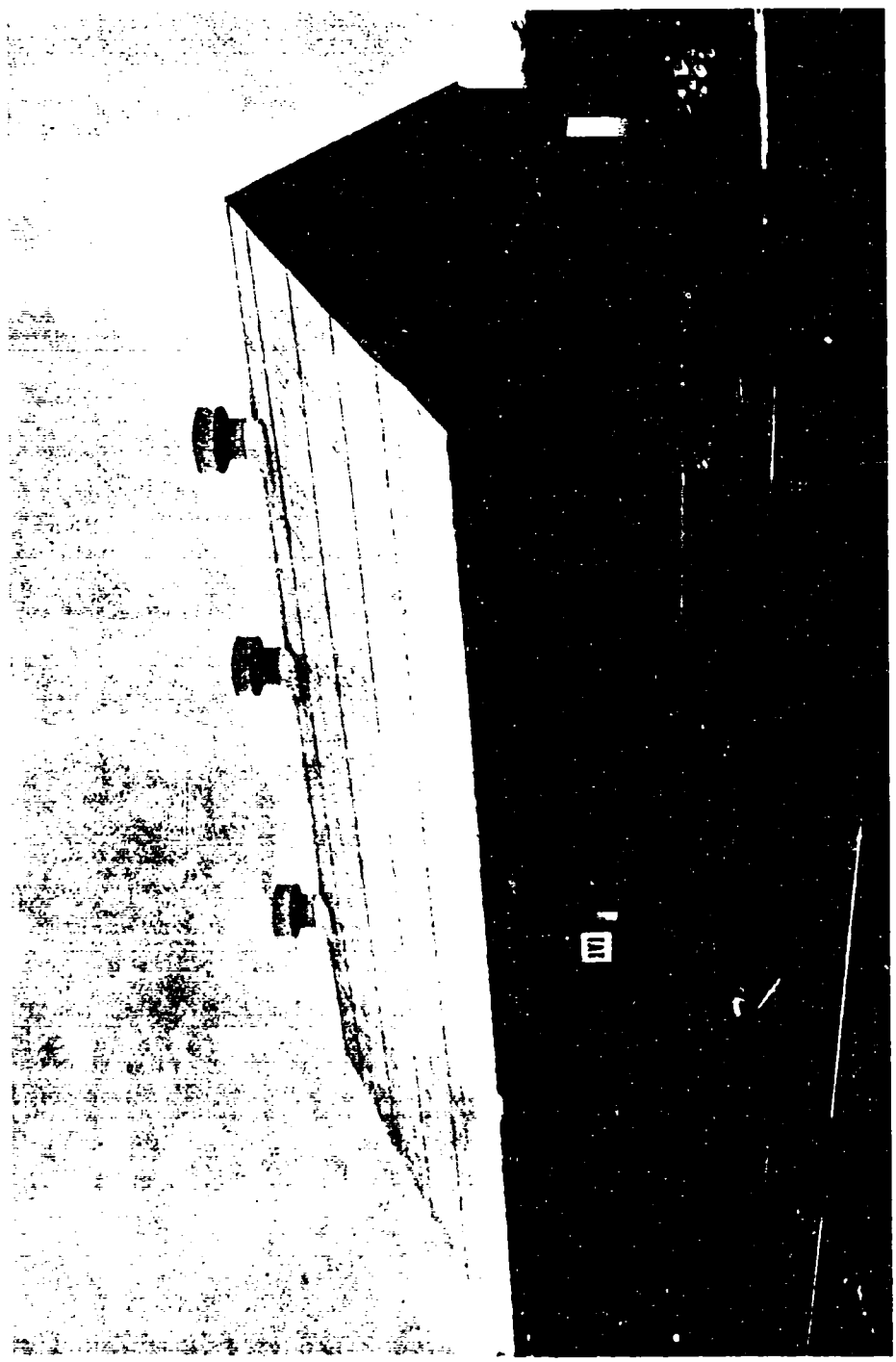

FIG. 27. Magazine 1Y1, Typical of the Non-Earth-Covered Y Shelters at the Naval Air Station, Barbers Point, Oahu, Hawaii.

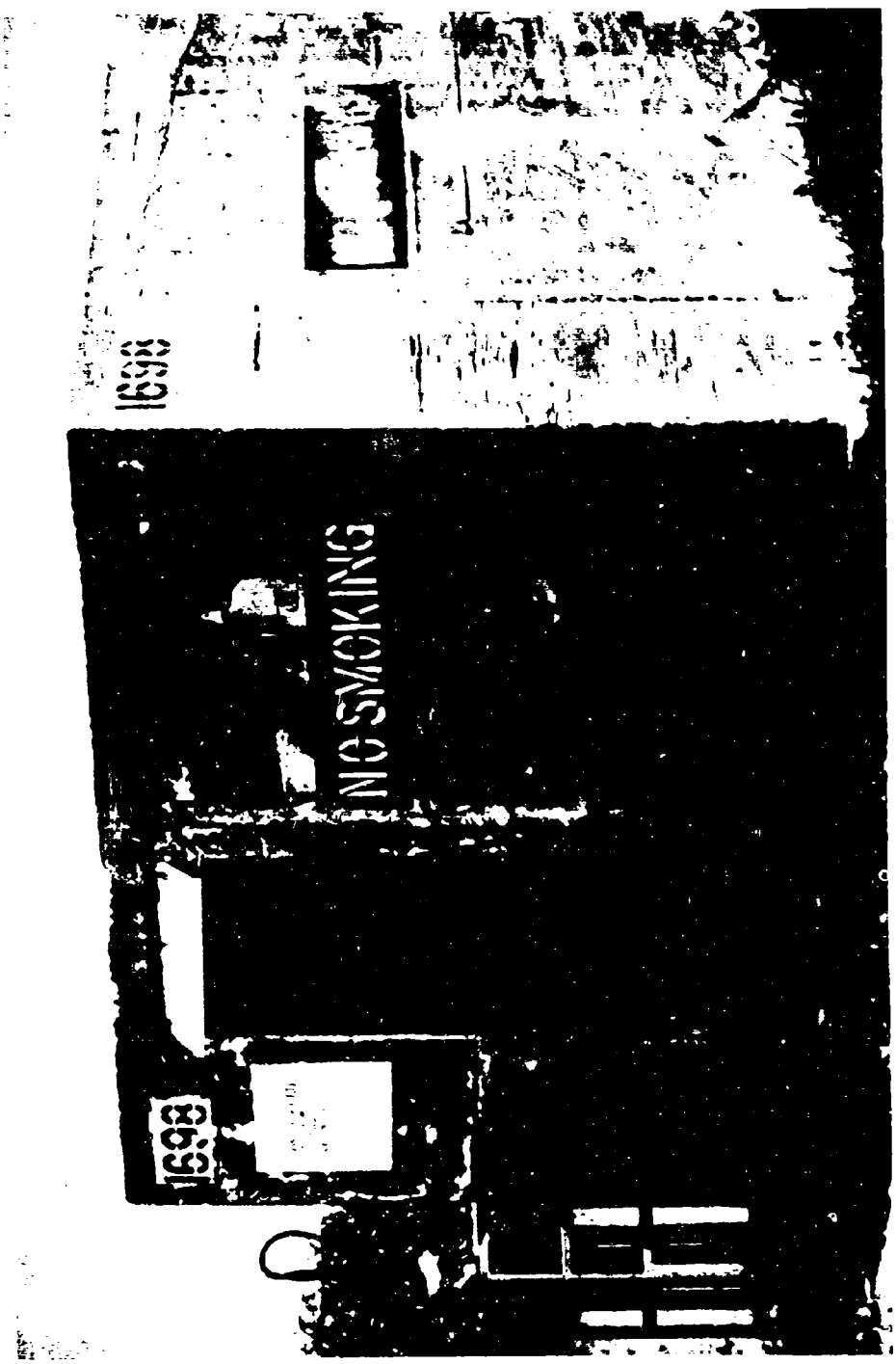

FIG. 28. Ready Service Locker 1698, Naval Air Station, Barbers Point, Oahu, Hawaii.

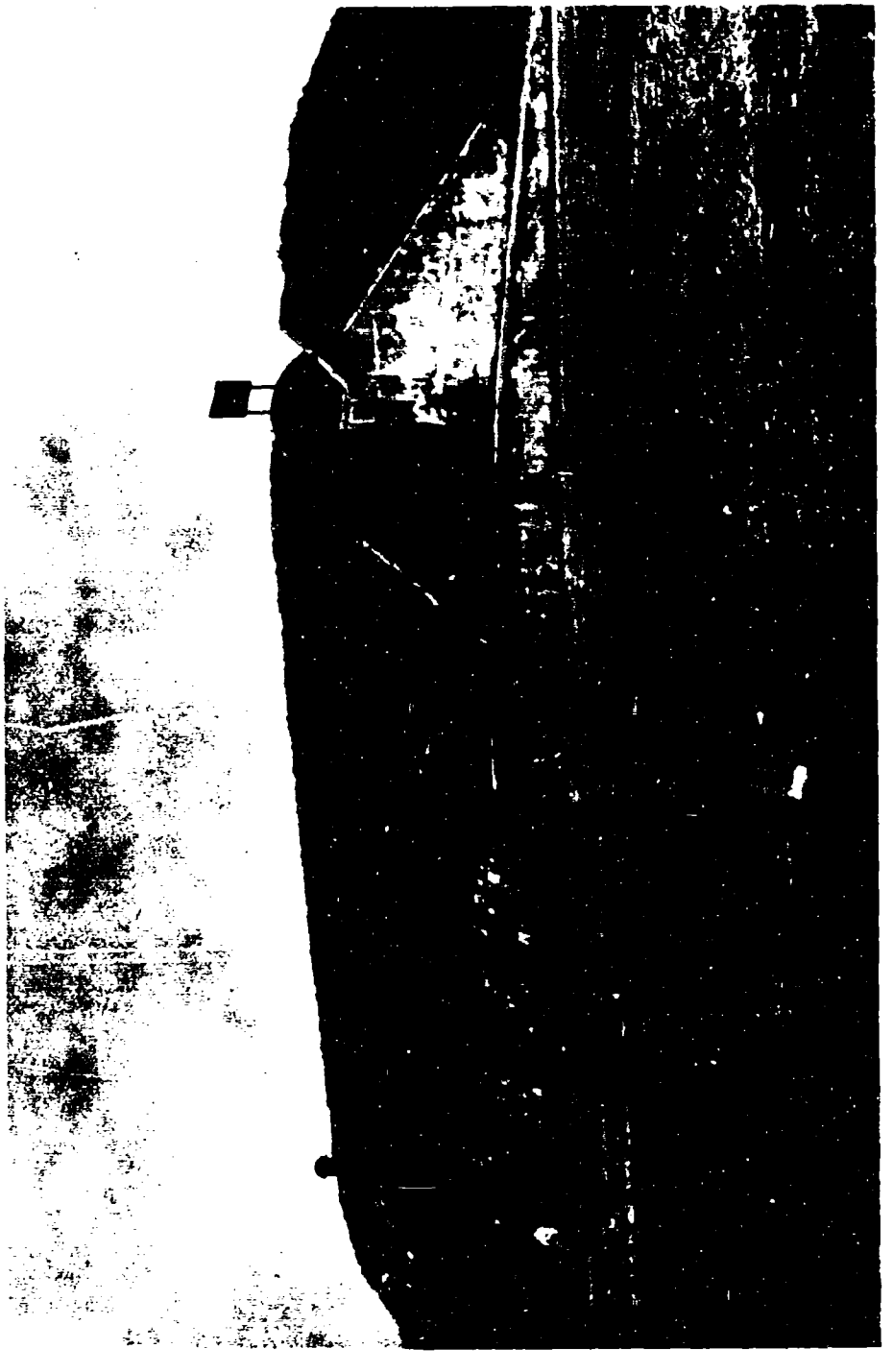

FIG. 29. Magazine 14AT3, Typical of AT Magazines at the Naval Magazines, Guam.

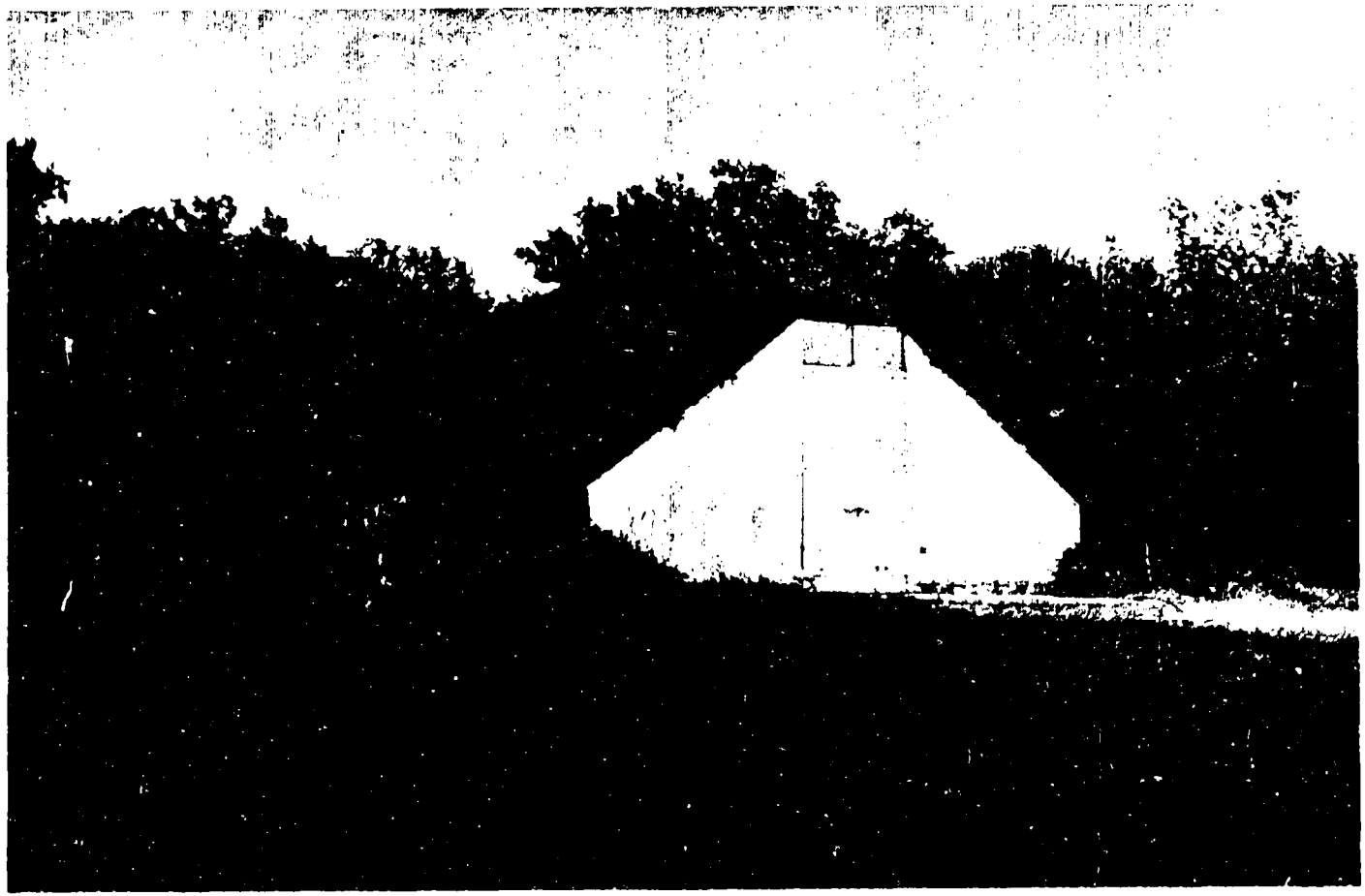

FIG. 30. Magazine 8YC2, Typical of YC Magazines at the Naval Magazines, Guam.

FIG. 31. Receiving and Sorting RS-1, Naval Magazines, Guam.

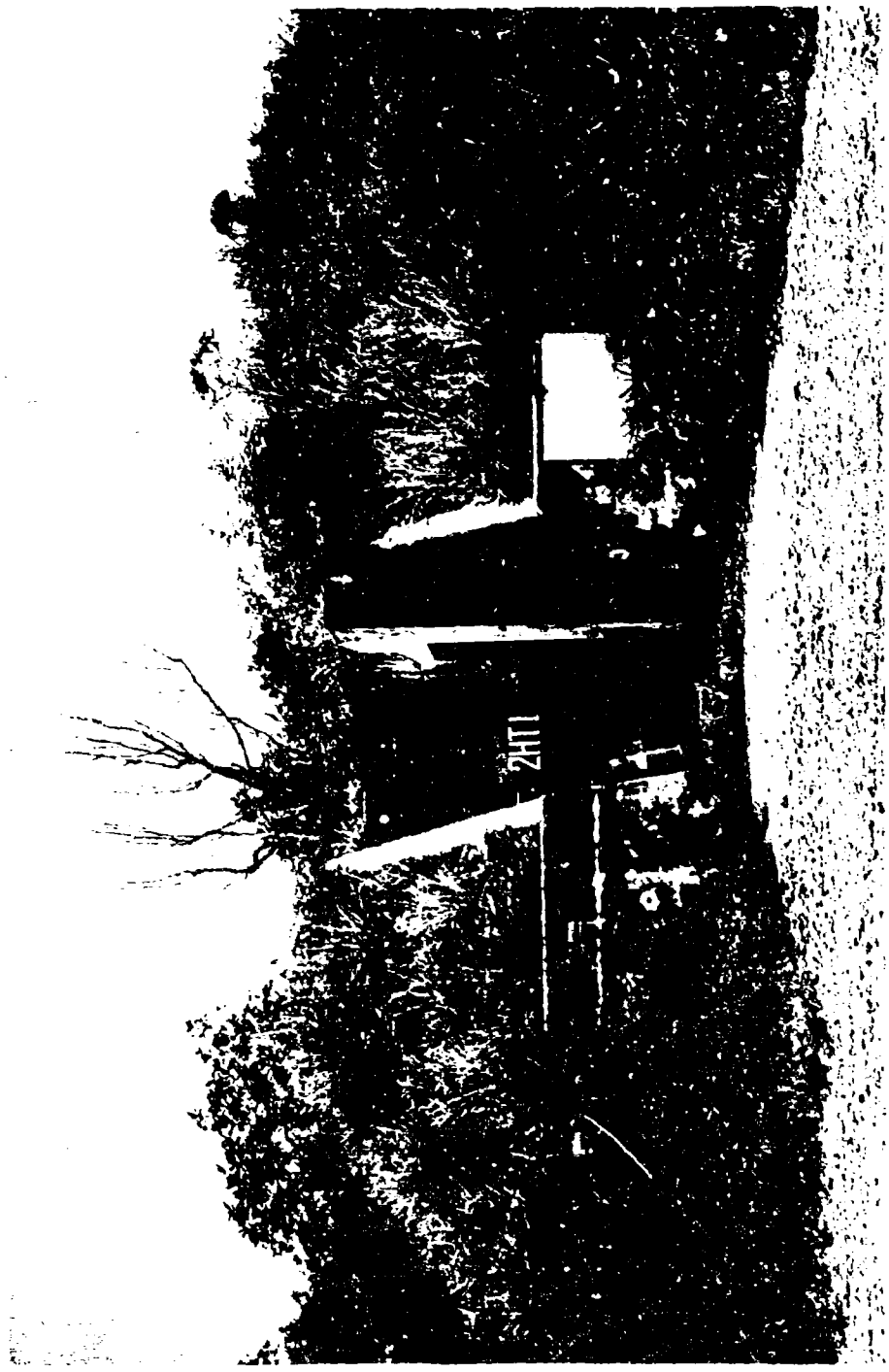

FIG. 32. Magazine 2HT1, Typical of the HT Magazines at the Naval Air Station, Agana, Guam.

FIG. 33. Magazine 3YC1, Typical of the YC Magazines at the Naval Air Station, Agana, Guam.

FIG. 34. Magazine 1XT1, Typical of the XT Magazines at the Naval Air Station, Agana, Guam.

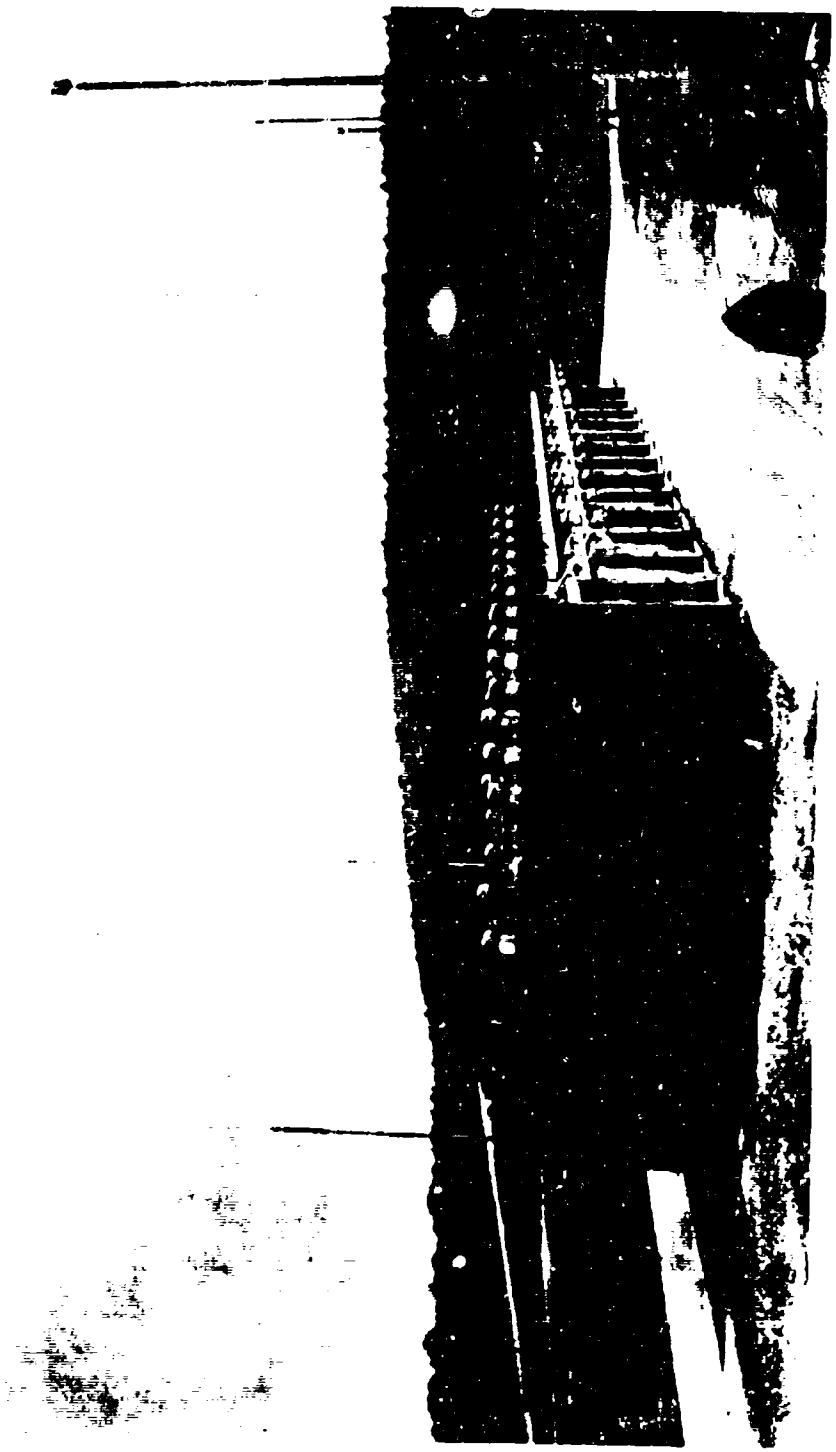

FIG. 35. Magazines 4X1 and 4XS1 at the Naval Air Station, Agana, Guam.

FIG. . agazine 5FC9, Typical of the FC Magazines e Naval Magazines, Subic Bay, Republic of the Philippines.

FIG. 37. Magazine 5HT1, Typical of the HT Magazines at the Naval Magazines, Subic Bay, Republic of the Philippines.

FIG. 38. Magazine 3ZC29, Typical of the ZC Magazines at the Naval Magazines, Subic Bay, Republic of the Philippines.

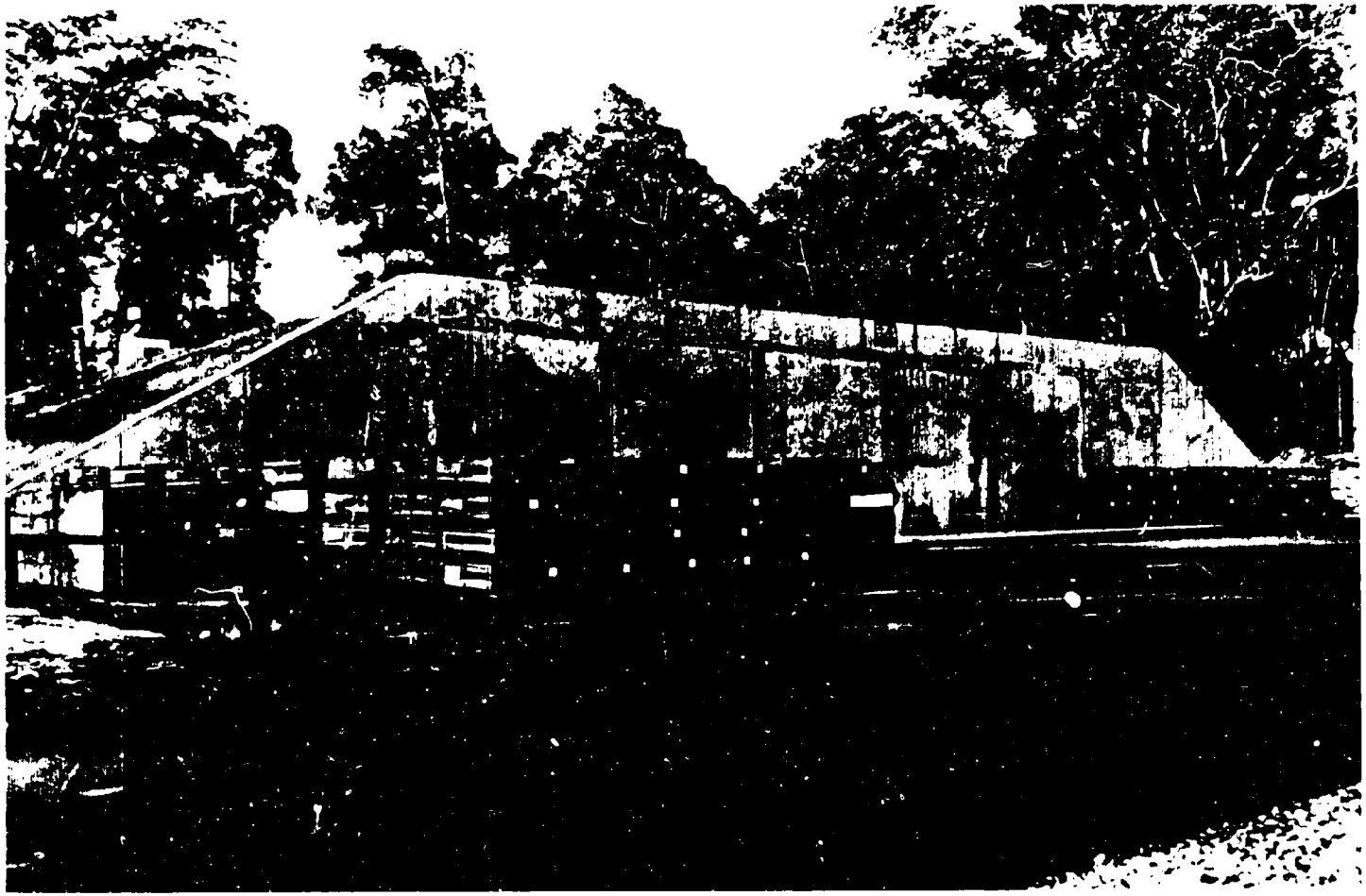

FIG. 39. Magazine 6PC1, Typical of the Newer Magazines at the Naval Magazines, Subic Bay, Republic of the Philippines.

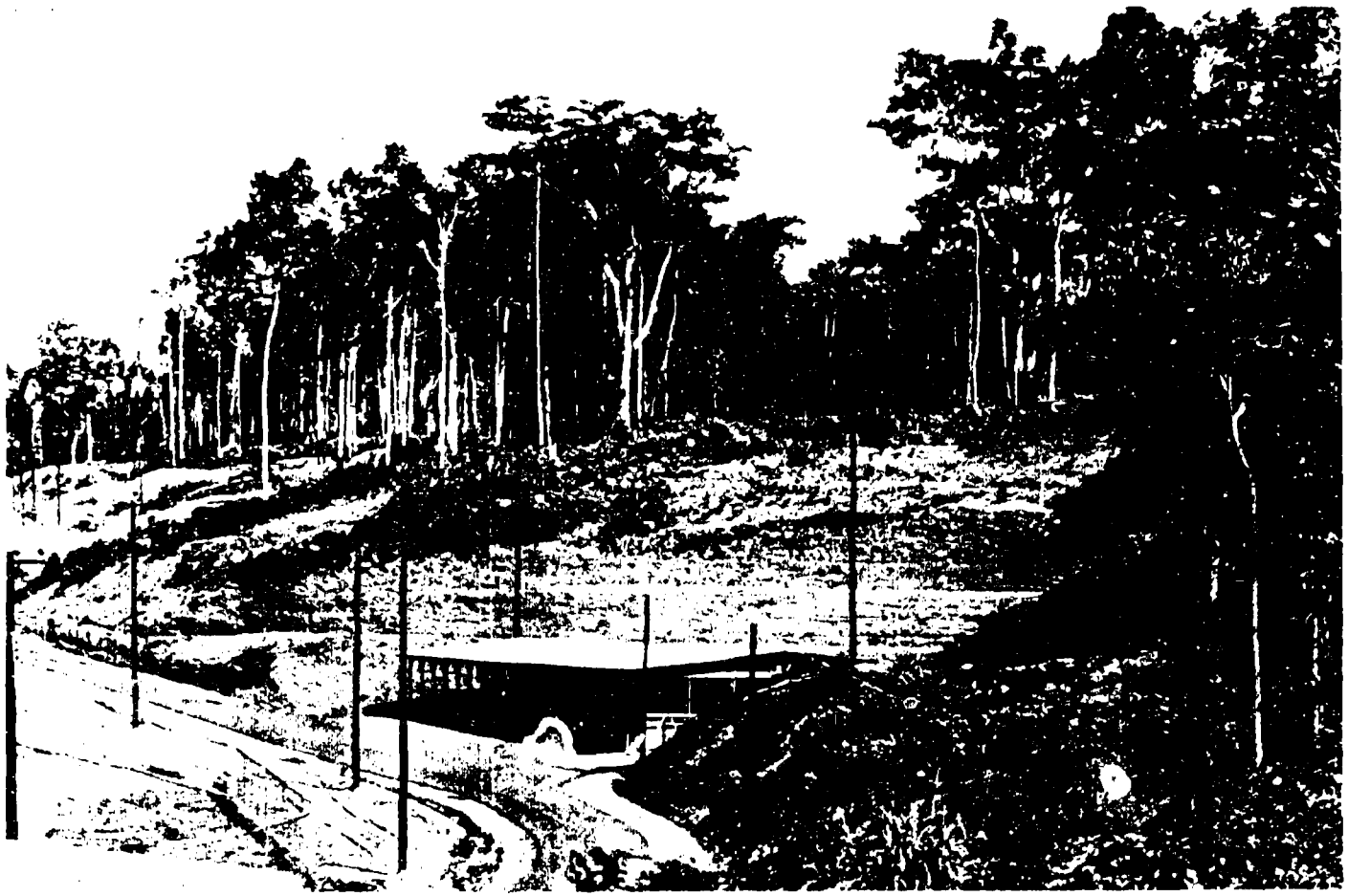

FIG. 40. Magazine RX, Typical of Temporary Shelters for Explosive Ordnance at the Naval Magazines, Subic Bay, Republic of the Philippines.

FIG. 41. Magazine 3AT2, This Magazine is Similar to the One Shown in Fig. 29. The Photograph Depicts the Temporary Shelter Built Around the Magazines. Naval Magazines, Subic Bay, Republic of the Philippines.

FIG. 42. Outside Storage 3-OS4, the OS Storage Varies From no Covering, Tarpaulin Covering to Light Shelter (as Shown in Fig. 40). Naval Magazines, Subic Bay, Republic of the Philippines.

FIG. 43. Magazine 1BTY5, Typical of the YTY, TX, BTY and XTX Magazines at the Naval Station, Sangley Point, Republic of the Philippines.

FIG. 44. Magazine 1XC9, Typical of XC and XCX Magazines at the Naval Station, Sangley Point, Republic of the Philippines.

FIG. 45. Magazine 3XC1, Found at the Naval Station, Sangley Point, Republic of the Philippines.

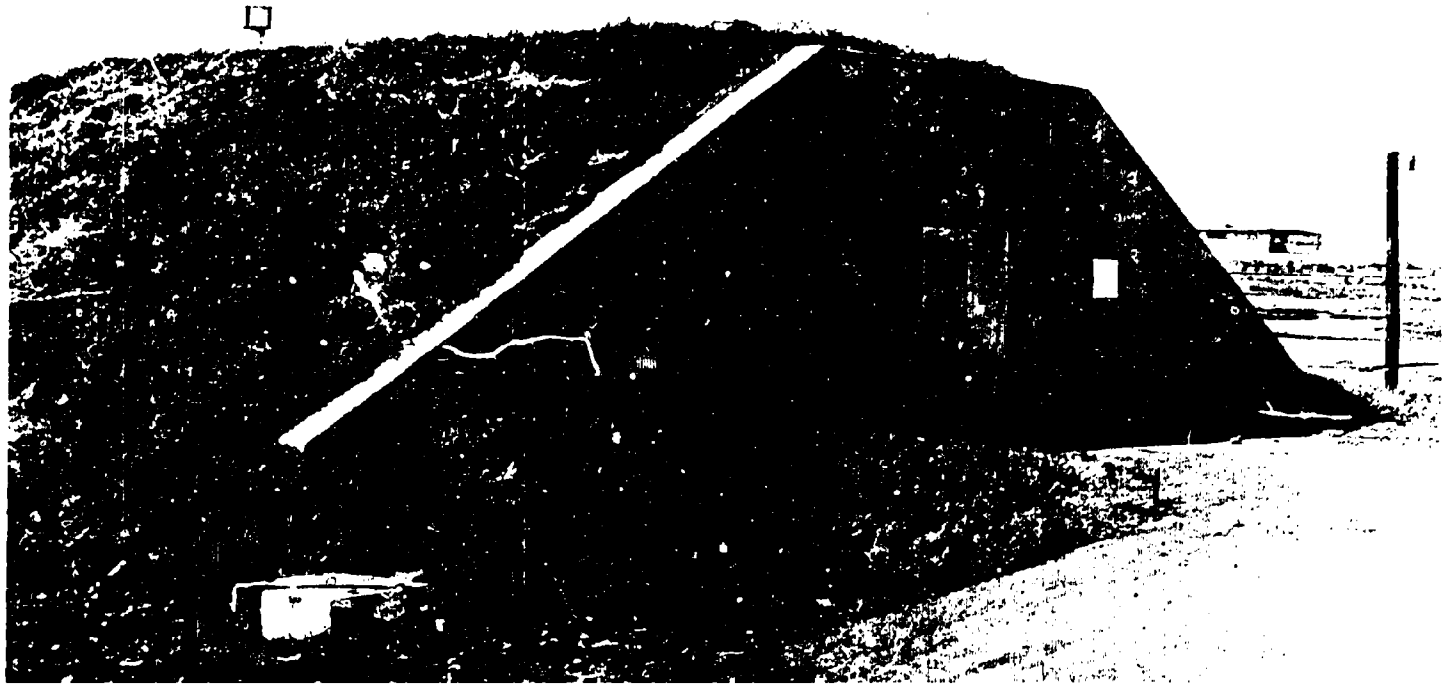

FIG. 46. Magazine 4YC1, Typical of the YC Magazines at the Naval Station, Sangley Point, Republic of the Philippines.

Appendix C

APPLICABLE STATISTICS

The standard deviation given along with the average maximum and average minimum temperature is a measure of dispersion (precision, reproducibility, spread, scatter, etc.) of temperatures within the month. If it is assumed that the temperature readings within each month are dispersed normally (Gaussian distribution) then the standard deviation (σ) can easily be used for calculating the percentage of temperature readings that would exceed nominal temperatures. The Gaussian distribution is a group of measurements that has its measurement frequencies bell-shaped about the average. That is, the spread of frequency of measurements below and above the averages would appear as equally descending bell-shaped curves on either side of the average.[1] Skewness is a term used to define the degree of departure from the symmetrical bell-shaped curve. Figure 47 presents this Gaussian distribution. The distributions for within-month temperatures differ from month to month in that the skewness of these distributions differ. However, the skewness is never so extreme that the assumption of normality, which can easily provide the prediction of approximate percentage points, can be discarded.

Temperature averages for the six storage sites under consideration in this report are given in Tables 4-15. An explanation of the symbols is as follows:

D = date, followed by month and year

N = number of data points measured

X = average

SD = standard deviation

LT = low temperature (minimum)

HT = high temperature (maximum)

[1] For a Gaussian distribution, the average (μ) minus 1 standard deviation (σ) to the average (μ) plus 1 standard deviation (σ), that is $\mu \pm 1\sigma$, includes approximately 68% of all the values of the distribution. Similarly $\mu \pm 2\sigma$ covers 95% and $\mu \pm 3\sigma$ covers 99% of all the values of the distribution.

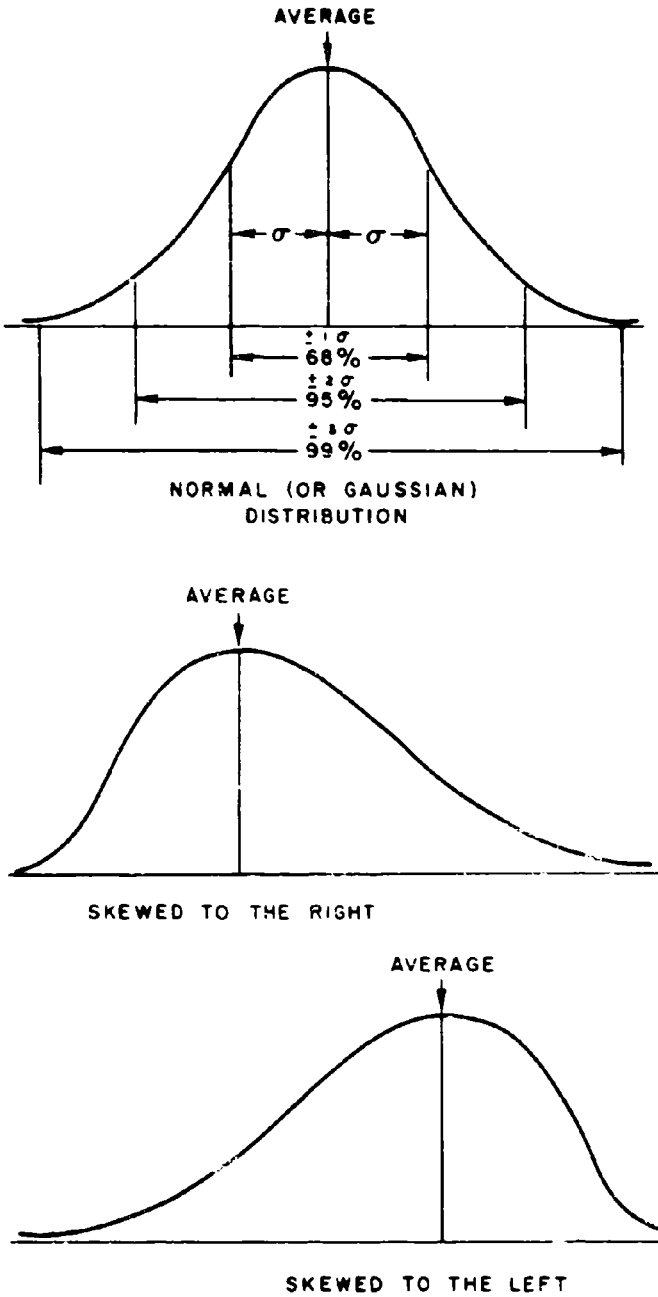

FIG. 47. Gaussian Distribution and Skewed Distributions.

TABLE 4. Minimum and Maximum Earth-Covered Storage Temperatures, Monthly Summaries, NAD, Oahu, Hawaii.

D	01	60	NAD	OAHU	N	163	X	74.72	SD	2.361	LT
D	01	60	NAD	OAHU	N	163	X	78.13	SD	1.933	HT
D	02	60	NAD	OAHU	N	165	X	73.99	SD	2.330	LT
D	02	60	NAD	OAHU	N	165	X	78.44	SD	1.722	HT
D	03	60	NAD	OAHU	N	190	X	74.39	SD	2.179	LT
D	03	60	NAD	OAHU	N	190	X	78.99	SD	1.837	HT
D	04	60	NAD	OAHU	N	171	X	76.91	SD	2.299	LT
D	04	60	NAD	OAHU	N	171	X	80.75	SD	1.758	HT
D	05	60	NAD	OAHU	N	1064	X	76.06	SD	2.909	LT
D	05	60	NAD	OAHU	N	1064	X	80.77	SD	3.058	HT
D	06	60	NAD	OAHU	N	1105	X	78.44	SD	3.126	LT
D	06	60	NAD	OAHU	N	1105	X	82.99	SD	2.955	HT
D	07	60	NAD	OAHU	N	969	X	78.87	SD	3.070	LT
D	07	60	NAD	OAHU	N	969	X	83.74	SD	2.952	HT
D	08	60	NAD	OAHU	N	883	X	81.25	SD	3.148	LT
D	08	60	NAD	OAHU	N	883	X	85.24	SD	3.122	HT
D	09	60	NAD	OAHU	N	1258	X	79.55	SD	3.535	LT
D	09	60	NAD	OAHU	N	1258	X	83.84	SD	3.151	HT
D	10	60	NAD	OAHU	N	1090	X	79.05	SD	3.142	LT
D	10	60	NAD	OAHU	N	1090	X	83.07	SD	4.040	HT
D	11	60	NAD	OAHU	N	981	X	76.96	SD	2.840	LT
D	11	60	NAD	OAHU	N	981	X	80.93	SD	3.106	HT
D	12	60	NAD	OAHU	N	1088	X	74.33	SD	2.730	LT
D	12	60	NAD	OAHU	N	1088	X	78.27	SD	2.932	HT
D	01	61	NAD	OAHU	N	920	X	72.41	SD	2.585	LT
D	01	61	NAD	OAHU	N	920	X	77.02	SD	2.943	HT
D	02	61	NAD	OAHU	N	839	X	72.29	SD	2.365	LT
D	02	61	NAD	OAHU	N	839	X	76.84	SD	2.793	HT
D	03	61	NAD	OAHU	N	1023	X	74.02	SD	2.660	LT
D	03	61	NAD	OAHU	N	1023	X	78.38	SD	3.090	HT
D	04	61	NAD	OAHU	N	897	X	74.43	SD	2.747	LT
D	04	61	NAD	OAHU	N	897	X	79.22	SD	2.873	HT
D	05	61	NAD	OAHU	N	975	X	76.85	SD	2.721	LT
D	05	61	NAD	OAHU	N	975	X	81.52	SD	3.007	HT
D	06	61	NAD	OAHU	N	968	X	78.01	SD	2.772	LT
D	06	61	NAD	OAHU	N	968	X	82.72	SD	2.909	HT
D	07	61	NAD	OAHU	N	885	X	78.51	SD	2.870	LT
D	07	61	NAD	OAHU	N	885	X	83.32	SD	2.950	HT
D	08	61	NAD	OAHU	N	1011	X	79.66	SD	2.973	LT
D	08	61	NAD	OAHU	N	1011	X	84.01	SD	3.040	HT
D	09	61	NAD	OAHU	N	882	X	79.34	SD	2.995	LT
D	09	61	NAD	OAHU	N	882	X	83.88	SD	3.126	HT
D	10	61	NAD	OAHU	N	951	X	77.79	SD	2.953	LT
D	10	61	NAD	OAHU	N	951	X	82.43	SD	2.930	HT
D	11	61	NAD	OAHU	N	903	X	75.76	SD	2.534	LT
D	11	61	NAD	OAHU	N	903	X	80.01	SD	3.113	HT
D	12	61	NAD	OAHU	N	901	X	73.84	SD	2.354	LT
D	12	61	NAD	OAHU	N	901	X	77.54	SD	2.769	HT

TABLE 4. (Cont.)

D	01	62	NAD	OAHU	N	976	X	72.62	SD	2.384	LT
D	01	62	NAD	OAHU	N	976	X	76.92	SD	2.743	HT
D	02	62	NAD	OAHU	N	862	X	71.65	SD	2.494	LT
D	02	62	NAD	OAHU	N	862	X	76.55	SD	2.685	HT
D	03	62	NAD	OAHU	N	904	X	71.00	SD	2.282	LT
D	03	62	NAD	OAHU	N	904	X	75.77	SD	2.548	HT
D	04	62	NAD	OAHU	N	919	X	73.20	SD	2.460	LT
D	04	62	NAD	OAHU	N	919	X	78.21	SD	2.755	HT
D	05	62	NAD	OAHU	N	966	X	74.69	SD	2.356	LT
D	05	62	NAD	OAHU	N	966	X	79.58	SD	2.572	HT
D	06	62	NAD	OAHU	N	514	X	76.63	SD	2.413	LT
D	06	62	NAD	OAHU	N	514	X	81.46	SD	2.812	HT
D	07	62	NAD	OAHU	N	335	X	77.44	SD	2.773	LT
D	07	62	NAD	OAHU	N	335	X	83.36	SD	2.518	HT
D	08	62	NAD	OAHU	N	358	X	78.92	SD	3.136	LT
D	08	62	NAD	OAHU	N	358	X	84.84	SD	2.571	HT
D	09	62	NAD	OAHU	N	325	X	79.25	SD	2.617	LT
D	09	62	NAD	OAHU	N	325	X	84.25	SD	2.604	HT
D	10	62	NAD	OAHU	N	320	X	78.41	SD	2.743	LT
D	10	62	NAD	OAHU	N	320	X	83.29	SD	2.677	HT
D	11	62	NAD	OAHU	N						LT
D	11	62	NAD	OAHU	N						HT
D	12	62	NAD	OAHU	N	161	X	73.71	SD	2.312	LT
D	12	62	NAD	OAHU	N	161	X	79.27	SD	2.819	HT
D	01	63	NAD	OAHU	N	340	X	71.49	SD	2.394	LT
D	01	63	NAD	OAHU	N	340	X	77.46	SD	2.827	HT
D	02	63	NAD	OAHU	N	316	X	71.15	SD	2.149	LT
D	02	63	NAD	OAHU	N	316	X	76.97	SD	2.554	HT
D	03	63	NAD	OAHU	N	354	X	71.78	SD	2.242	LT
D	03	63	NAD	OAHU	N	354	X	77.06	SD	2.131	HT
D	04	63	NAD	OAHU	N	323	X	72.50	SD	1.960	LT
D	04	63	NAD	OAHU	N	323	X	77.40	SD	2.021	HT
D	05	63	NAD	OAHU	N	355	X	73.22	SD	2.273	LT
D	05	63	NAD	OAHU	N	355	X	78.70	SD	2.209	HT
D	06	63	NAD	OAHU	N	352	X	75.62	SD	3.078	LT
D	06	63	NAD	OAHU	N	352	X	81.37	SD	2.373	HT
D	07	63	NAD	OAHU	N	338	X	77.04	SD	3.081	LT
D	07	63	NAD	OAHU	N	338	X	83.14	SD	2.710	HT
D	08	63	NAD	OAHU	N	338	X	78.38	SD	2.806	LT
D	08	63	NAD	OAHU	N	338	X	83.81	SD	2.414	HT
D	09	63	NAD	OAHU	N	339	X	79.29	SD	2.683	LT
D	09	63	NAD	OAHU	N	339	X	84.24	SD	2.608	HT
D	10	63	NAD	OAHU	N	376	X	78.19	SD	2.525	LT
D	10	63	NAD	OAHU	N	376	X	83.08	SD	2.442	HT
D	11	63	NAD	OAHU	N	289	X	76.45	SD	2.606	LT
D	11	63	NAD	OAHU	N	289	X	81.77	SD	2.575	HT
D	12	63	NAD	OAHU	N	352	X	74.25	SD	2.340	LT
D	12	63	NAD	OAHU	N	352	X	79.56	SD	2.725	HT

TABLE 4. (Cont.)

D	01	64	NAD	OAHU	N	355	X	73.47	SD	2.206	LT
D	01	64	NAD	OAHU	N	355	X	77.85	SD	2.297	HT
D	02	64	NAD	OAHU	N	320	X	73.26	SD	2.308	LT
D	02	64	NAD	OAHU	N	320	X	77.59	SD	2.570	HT
D	03	64	NAD	OAHU	N	318	X	73.09	SD	2.424	LT
D	03	64	NAD	OAHU	N	318	X	77.66	SD	2.448	HT
D	04	64	NAD	OAHU	N	311	X	72.93	SD	2.479	LT
D	04	64	NAD	OAHU	N	311	X	77.66	SD	2.275	HT
D	05	64	NAD	OAHU	N	319	X	74.44	SD	2.829	LT
D	05	64	NAD	OAHU	N	319	X	79.95	SD	2.397	HT
D	06	64	NAD	OAHU	N	352	X	76.58	SD	3.332	LT
D	06	64	NAD	OAHU	N	352	X	82.59	SD	2.722	HT
D	07	64	NAD	OAHU	N	302	X	78.69	SD	3.044	LT
D	07	64	NAD	OAHU	N	302	X	83.80	SD	2.424	HT
D	08	64	NAD	OAHU	N	335	X	79.27	SD	2.855	LT
D	08	64	NAD	OAHU	N	335	X	84.00	SD	2.443	HT
D	09	64	NAD	OAHU	N	335	X	79.54	SD	2.818	LT
D	09	64	NAD	OAHU	N	335	X	84.61	SD	2.620	HT
D	10	64	NAD	OAHU	N	334	X	78.43	SD	2.878	LT
D	10	64	NAD	OAHU	N	334	X	83.03	SD	2.668	HT
D	11	64	NAD	OAHU	N	300	X	76.36	SD	2.774	LT
D	11	64	NAD	OAHU	N	300	X	81.21	SD	2.747	HT
D	12	64	NAD	OAHU	N	350	X	74.18	SD	2.426	LT
D	12	64	NAD	OAHU	N	350	X	79.36	SD	2.651	HT
D	01	65	NAD	OAHU	N	414	X	72.97	SD	2.203	LT
D	01	65	NAD	OAHU	N	414	X	78.58	SD	3.069	HT
D	02	65	NAD	OAHU	N	398	X	71.09	SD	2.405	LT
D	02	65	NAD	OAHU	N	398	X	77.01	SD	3.271	HT
D	03	65	NAD	OAHU	N	411	X	70.83	SD	2.826	LT
D	03	65	NAD	OAHU	N	411	X	76.94	SD	3.118	HT
D	04	65	NAD	OAHU	N	407	X	72.48	SD	2.859	LT
D	04	65	NAD	OAHU	N	407	X	78.40	SD	2.760	HT
D	05	65	NAD	OAHU	N	395	X	74.17	SD	2.675	LT
D	05	65	NAD	OAHU	N	395	X	80.04	SD	2.586	HT
D	06	65	NAD	OAHU	N	386	X	76.02	SD	3.108	LT
D	06	65	NAD	OAHU	N	386	X	82.11	SD	2.305	HT
D	07	65	NAD	OAHU	N	397	X	77.35	SD	3.519	LT
D	07	65	NAD	OAHU	N	397	X	83.72	SD	2.475	HT
D	08	65	NAD	OAHU	N	396	X	78.43	SD	3.248	LT
D	08	65	NAD	OAHU	N	396	X	84.23	SD	2.639	HT
D	09	65	NAD	OAHU	N	401	X	78.85	SD	3.352	LT
D	09	65	NAD	OAHU	N	401	X	84.22	SD	2.736	HT
D	10	65	NAD	OAHU	N	403	X	77.92	SD	3.214	LT
D	10	65	NAD	OAHU	N	403	X	83.52	SD	2.805	HT
D	11	65	NAD	OAHU	N	385	X	74.98	SD	2.685	LT
D	11	65	NAD	OAHU	N	385	X	81.05	SD	2.784	HT
D	12	65	NAD	OAHU	N	406	X	71.89	SD	2.610	LT
D	12	65	NAD	OAHU	N	406	X	78.04	SD	3.077	HT

TABLE 4. (Cont.)

D	01	66	NAD	OAHU	N	532	X	71.85	SD	2.692	LT
D	01	66	NAD	OAHU	N	532	X	76.04	SD	2.124	HT
D	02	66	NAD	OAHU	N	513	X	71.52	SD	2.787	LT
D	02	66	NAD	OAHU	N	513	X	75.55	SD	1.953	HT
D	03	66	NAD	OAHU	N	550	X	71.49	SD	2.886	LT
D	03	66	NAD	OAHU	N	550	X	76.15	SD	2.322	HT
D	04	66	NAD	OAHU	N	532	X	72.72	SD	2.733	LT
D	04	66	NAD	OAHU	N	532	X	77.42	SD	2.366	HT
D	05	66	NAD	OAHU	N	532	X	74.60	SD	3.054	LT
D	05	66	NAD	OAHU	N	532	X	79.56	SD	3.250	HT
D	06	66	NAD	OAHU	N	485	X	77.01	SD	3.224	LT
D	06	66	NAD	OAHU	N	485	X	81.65	SD	4.107	HT
D	07	66	NAD	OAHU	N	497	X	78.60	SD	3.325	LT
D	07	66	NAD	OAHU	N	497	X	82.89	SD	4.219	HT
D	08	66	NAD	OAHU	N	528	X	79.40	SD	3.306	LT
D	08	66	NAD	OAHU	N	528	X	83.54	SD	4.346	HT
D	09	66	NAD	OAHU	N	445	X	79.11	SD	3.287	LT
D	09	66	NAD	OAHU	N	445	X	83.18	SD	4.542	HT
D	10	66	NAD	OAHU	N	488	X	78.38	SD	3.145	LT
D	10	66	NAD	OAHU	N	488	X	82.65	SD	4.159	HT
D	11	66	NAD	OAHU	N	489	X	76.19	SD	2.379	LT
D	11	66	NAD	OAHU	N	489	X	81.05	SD	3.715	HT
D	12	66	NAD	OAHU	N	480	X	74.68	SD	2.246	LT
D	12	66	NAD	OAHU	N	480	X	79.07	SD	3.099	HT

TABLE 5. Minimum and Maximum Non-Earth-Covered Storage Temperatures, Monthly Summaries, NAD, Oahu, Hawaii.

D	01	60	NAD	OAHU	N	8	X	68.75	SD	5.007	LT
D	01	60	NAD	OAHU	N	8	X	78.75	SD	3.196	HT
D	02	60	NAD	OAHU	N	7	X	68.43	SD	5.912	LT
D	02	60	NAD	OAHU	N	7	X	78.43	SD	2.878	HT
D	03	60	NAD	OAHU	N	9	X	67.78	SD	6.099	LT
D	03	60	NAD	OAHU	N	9	X	80.33	SD	3.279	HT
D	04	60	NAD	OAHU	N	9	X	72.11	SD	4.755	LT
D	04	60	NAD	OAHU	N	9	X	80.00	SD	1.732	HT
D	05	60	NAD	OAHU	N	118	X	76.46	SD	2.406	LT
D	05	60	NAD	OAHU	N	118	X	86.58	SD	3.022	HT
D	06	60	NAD	OAHU	N	124	X	78.92	SD	2.255	LT
D	06	60	NAD	OAHU	N	124	X	88.85	SD	3.445	HT
D	07	60	NAD	OAHU	N	111	X	78.63	SD	2.796	LT
D	07	60	NAD	OAHU	N	111	X	89.37	SD	3.205	HT
D	08	60	NAD	OAHU	N	128	X	81.44	SD	2.720	LT
D	08	60	NAD	OAHU	N	128	X	90.50	SD	3.561	HT
D	09	60	NAD	OAHU	N	123	X	80.63	SD	2.826	LT
D	09	60	NAD	OAHU	N	123	X	89.90	SD	2.861	HT
D	10	60	NAD	OAHU	N	126	X	78.75	SD	2.881	LT
D	10	60	NAD	OAHU	N	126	X	88.76	SD	2.815	HT
D	11	60	NAD	OAHU	N	107	X	76.79	SD	2.293	LT
D	11	60	NAD	OAHU	N	107	X	85.91	SD	2.478	HT
D	12	60	NAD	OAHU	N	126	X	73.44	SD	2.726	LT
D	12	60	NAD	OAHU	N	126	X	82.79	SD	3.224	HT
D	01	61	NAD	OAHU	N	118	X	72.44	SD	2.580	LT
D	01	61	NAD	OAHU	N	118	X	82.42	SD	2.402	HT
D	02	61	NAD	OAHU	N	107	X	72.60	SD	2.145	LT
D	02	61	NAD	OAHU	N	107	X	82.78	SD	2.582	HT
D	03	61	NAD	OAHU	N	129	X	75.02	SD	1.930	LT
D	03	61	NAD	OAHU	N	129	X	85.35	SD	2.871	HT
D	04	61	NAD	OAHU	N	112	X	74.71	SD	2.384	LT
D	04	61	NAD	OAHU	N	112	X	84.99	SD	2.625	HT
D	05	61	NAD	OAHU	N	123	X	78.16	SD	2.500	LT
D	05	61	NAD	OAHU	N	123	X	88.30	SD	3.326	HT
D	06	61	NAD	OAHU	N	124	X	79.31	SD	1.664	LT
D	06	61	NAD	OAHU	N	124	X	79.31	SD	1.664	HT
D	07	61	NAD	OAHU	N	113	X	79.45	SD	2.117	LT
D	07	61	NAD	OAHU	N	113	X	89.00	SD	3.082	HT
D	08	61	NAD	OAHU	N	128	X	81.11	SD	1.606	LT
D	08	61	NAD	OAHU	N	128	X	90.56	SD	3.071	HT
D	09	61	NAD	OAHU	N	112	X	79.52	SD	2.748	LT
D	09	61	NAD	OAHU	N	112	X	90.12	SD	3.205	HT
D	10	61	NAD	OAHU	N	122	X	77.79	SD	2.743	LT
D	10	61	NAD	OAHU	N	122	X	87.66	SD	2.925	HT
D	11	61	NAD	OAHU	N	117	X	75.48	SD	2.336	LT
D	11	61	NAD	OAHU	N	117	X	85.18	SD	2.682	HT
D	12	61	NAD	OAHU	N	115	X	73.80	SD	2.005	LT
D	12	61	NAD	OAHU	N	115	X	82.82	SD	2.171	HT

TABLE 5. (Cont.)

D	01	62	NAD	OAHU	N	119	X	71.64	SD	2.867 LT
D	01	62	NAD	OAHU	N	118	X	82.31	SD	2.266 HT
D	02	62	NAD	OAHU	N	97	X	70.17	SD	3.404 LT
D	02	62	NAD	OAHU	N	97	X	82.13	SD	3.174 HT
D	03	62	NAD	OAHU	N	102	X	70.72	SD	2.231 LT
D	03	62	NAD	OAHU	N	102	X	82.12	SD	3.052 HT
D	04	62	NAD	OAHU	N	102	X	73.65	SD	1.467 LT
D	04	62	NAD	OAHU	N	102	X	86.27	SD	3.363 HT
D	05	62	NAD	OAHU	N	105	X	75.50	SD	1.996 LT
D	05	62	NAD	OAHU	N	105	X	87.62	SD	3.342 HT
D	06	62	NAD	OAHU	N	92	X	76.75	SD	1.681 LT
D	06	62	NAD	OAHU	N	92	X	89.35	SD	3.143 HT
D	07	62	NAD	OAHU	N	91	X	79.09	SD	1.644 LT
D	07	62	NAD	OAHU	N	91	X	91.12	SD	3.087 HT
D	08	62	NAD	OAHU	N	105	X	79.72	SD	1.114 LT
D	08	62	NAD	OAHU	N	105	X	91.86	SD	2.989 HT
D	09	62	NAD	OAHU	N	77	X	78.48	SD	1.854 LT
D	09	62	NAD	OAHU	N	77	X	90.66	SD	3.424 HT
D	10	62	NAD	OAHU	N	75	X	77.04	SD	2.202 LT
D	10	62	NAD	OAHU	N	75	X	88.56	SD	2.262 HT
D	11	62	NAD	OAHU	N					LT
D	11	62	NAD	OAHU	N					HT
D	12	62	NAD	OAHU	N	55	X	73.64	SD	1.905 LT
D	12	62	NAD	OAHU	N	55	X	82.47	SD	2.624 HT
D	01	63	NAD	OAHU	N	102	X	69.68	SD	3.306 LT
D	01	63	NAD	OAHU	N	102	X	81.27	SD	2.561 HT
D	02	63	NAD	OAHU	N	94	X	71.01	SD	1.769 LT
D	02	63	NAD	OAHU	N	94	X	83.06	SD	2.606 HT
D	03	63	NAD	OAHU	N	105	X	71.58	SD	2.079 LT
D	03	63	NAD	OAHU	N	105	X	84.83	SD	3.059 HT
D	04	63	NAD	OAHU	N	99	X	72.58	SD	1.526 LT
D	04	63	NAD	OAHU	N	99	X	84.93	SD	2.532 HT
D	05	63	NAD	OAHU	N	108	X	74.06	SD	2.167 LT
D	05	63	NAD	OAHU	N	108	X	86.33	SD	3.674 HT
D	06	63	NAD	OAHU	N	107	X	76.60	SD	2.502 LT
D	06	63	NAD	OAHU	N	107	X	90.01	SD	2.938 HT
D	07	63	NAD	OAHU	N	102	X	78.81	SD	2.091 LT
D	07	63	NAD	OAHU	N	102	X	91.54	SD	3.120 HT
D	08	63	NAD	OAHU	N	107	X	78.73	SD	1.521 LT
D	08	63	NAD	OAHU	N	107	X	91.50	SD	3.272 HT
D	09	63	NAD	OAHU	N	104	X	79.33	SD	2.068 LT
D	09	63	NAD	OAHU	N	104	X	91.63	SD	3.297 HT
D	10	63	NAD	OAHU	N	113	X	78.00	SD	1.660 LT
D	10	63	NAD	OAHU	N	113	X	90.09	SD	2.433 HT
D	11	63	NAD	OAHU	N	87	X	74.72	SD	1.476 LT
D	11	63	NAD	OAHU	N	87	X	87.43	SD	2.948 HT
D	12	63	NAD	OAHU	N	104	X	71.60	SD	2.326 LT
D	12	63	NAD	OAHU	N	104	X	83.76	SD	2.428 HT

TABLE 5. (Cont.)

D	01	64	NAD	OAHU	N	109	X	72.61	SD	1.593	LT
D	01	64	NAD	OAHU	N	109	X	83.07	SD	2.197	HT
D	02	64	NAD	OAHU	N	99	X	72.30	SD	1.752	LT
D	02	64	NAD	OAHU	N	99	X	83.16	SD	2.193	HT
D	03	64	NAD	OAHU	N	99	X	71.94	SD	2.755	LT
D	03	64	NAD	OAHU	N	99	X	84.27	SD	2.490	HT
D	04	64	NAD	OAHU	N	99	X	73.03	SD	2.007	LT
D	04	64	NAD	OAHU	N	99	X	84.76	SD	3.127	HT
D	05	64	NAD	OAHU	N	94	X	74.61	SD	1.839	LT
D	05	64	NAD	OAHU	N	94	X	87.29	SD	3.164	HT
D	06	64	NAD	OAHU	N	105	X	77.33	SD	2.252	LT
D	06	64	NAD	OAHU	N	105	X	90.54	SD	3.325	HT
D	07	64	NAD	OAHU	N	92	X	78.15	SD	1.467	LT
D	07	64	NAD	OAHU	N	92	X	90.32	SD	3.052	HT
D	08	64	NAD	OAHU	N	102	X	79.41	SD	1.588	LT
D	08	64	NAD	OAHU	N	102	X	91.53	SD	2.695	HT
D	09	64	NAD	OAHU	N	99	X	78.98	SD	1.591	LT
D	09	64	NAD	OAHU	N	99	X	90.87	SD	2.750	HT
D	10	64	NAD	OAHU	N	98	X	76.94	SD	1.442	LT
D	10	64	NAD	OAHU	N	98	X	88.02	SD	2.721	HT
D	11	64	NAD	OAHU	N	87	X	74.18	SD	1.715	LT
D	11	64	NAD	OAHU	N	87	X	85.66	SD	2.367	HT
D	12	64	NAD	OAHU	N	103	X	71.97	SD	3.037	LT
D	12	64	NAD	OAHU	N	103	X	84.00	SD	2.642	HT
D	01	65	NAD	OAHU	N	101	X	70.90	SD	1.769	LT
D	01	65	NAD	OAHU	N	101	X	82.49	SD	2.583	HT
D	02	65	NAD	OAHU	N	95	X	68.46	SD	2.259	LT
D	02	65	NAD	OAHU	N	95	X	81.55	SD	2.604	HT
D	03	65	NAD	OAHU	N	102	X	69.14	SD	2.786	LT
D	03	65	NAD	OAHU	N	102	X	82.83	SD	2.832	HT
D	04	65	NAD	OAHU	N	104	X	72.35	SD	2.242	LT
D	04	65	NAD	OAHU	N	104	X	84.47	SD	2.738	HT
D	05	65	NAD	OAHU	N	103	X	74.08	SD	1.898	LT
D	05	65	NAD	OAHU	N	103	X	86.03	SD	2.837	HT
D	06	65	NAD	OAHU	N	100	X	78.10	SD	1.624	LT
D	06	65	NAD	OAHU	N	100	X	89.94	SD	3.237	HT
D	07	65	NAD	OAHU	N	101	X	78.62	SD	2.078	LT
D	07	65	NAD	OAHU	N	101	X	90.20	SD	3.105	HT
D	08	65	NAD	OAHU	N	100	X	77.66	SD	2.952	LT
D	08	65	NAD	OAHU	N	100	X	91.16	SD	3.509	HT
D	09	65	NAD	OAHU	N	97	X	78.42	SD	1.749	LT
D	09	65	NAD	OAHU	N	97	X	91.05	SD	2.822	HT
D	10	65	NAD	OAHU	N	95	X	76.00	SD	2.037	LT
D	10	65	NAD	OAHU	N	95	X	89.35	SD	3.168	HT
D	11	65	NAD	OAHU	N	91	X	73.20	SD	2.120	LT
D	11	65	NAD	OAHU	N	91	X	85.74	SD	2.658	HT
D	12	65	NAD	OAHU	N	98	X	69.78	SD	2.264	LT
D	12	65	NAD	OAHU	N	98	X	81.48	SD	3.275	HT

TABLE 5. (Cont.)

D	01	06	NAD	OAHU	N	94	X	69.60	SD	1.989	LT
D	01	06	NAD	OAHU	N	94	X	82.60	SD	2.117	HT
D	02	06	NAD	OAHU	N	91	X	68.93	SD	2.516	LT
D	02	06	NAD	OAHU	N	91	X	82.16	SD	2.513	HT
D	03	06	NAD	OAHU	N	100	X	70.25	SD	2.552	LT
D	03	06	NAD	OAHU	N	100	X	83.97	SD	3.664	HT
D	04	06	NAD	OAHU	N	94	X	71.10	SD	2.095	LT
D	04	06	NAD	OAHU	N	94	X	85.99	SD	2.666	HT
D	05	06	NAD	OAHU	N	127	X	74.83	SD	2.313	LT
D	05	06	NAD	OAHU	N	127	X	87.38	SD	4.293	HT
D	06	06	NAD	OAHU	N	88	X	78.61	SD	1.884	LT
D	06	06	NAD	OAHU	N	88	X	91.30	SD	2.976	HT
D	07	06	NAD	OAHU	N	93	X	79.25	SD	1.701	LT
D	07	06	NAD	OAHU	N	93	X	91.69	SD	2.882	HT
D	08	06	NAD	OAHU	N	104	X	79.89	SD	1.576	LT
D	08	06	NAD	OAHU	N	104	X	93.13	SD	2.886	HT
D	09	06	NAD	OAHU	N	80	X	77.90	SD	1.595	LT
D	09	06	NAD	OAHU	N	80	X	92.64	SD	2.665	HT
D	10	06	NAD	OAHU	N	91	X	77.11	SD	1.748	LT
D	10	06	NAD	OAHU	N	91	X	90.40	SD	2.649	HT
D	11	06	NAD	OAHU	N	92	X	74.16	SD	1.853	LT
D	11	06	NAD	OAHU	N	92	X	87.67	SD	2.632	HT
D	12	06	NAD	OAHU	N	91	X	71.82	SD	2.559	LT
D	12	06	NAD	OAHU	N	91	X	84.35	SD	2.782	HT

TABLE 6. Minimum and Maximum Earth-Covered Storage Temperatures, Monthly Summaries, NAS, Oahu, Hawaii.

D	01	65	NAS,	OAHU	N	103	X	74.75	SD	3.403	LT
D	01	65	NAS,	OAHU	N	103	X	80.48	SD	2.927	HT
D	02	65	NAS,	OAHU	N	92	X	72.66	SD	2.419	LT
D	02	65	NAS,	OAHU	N	92	X	76.70	SD	2.329	HT
D	03	65	NAS,	OAHU	N	102	X	73.65	SD	2.852	LT
D	03	65	NAS,	OAHU	N	102	X	79.62	SD	3.398	HT
D	04	65	NAS,	OAHU	N	112	X	76.29	SD	3.030	LT
D	04	65	NAS,	OAHU	N	112	X	81.30	SD	2.825	HT
D	05	65	NAS,	OAHU	N	92	X	77.72	SD	2.884	LT
D	05	65	NAS,	OAHU	N	92	X	82.68	SD	2.660	HT
D	06	65	NAS,	OAHU	N	102	X	80.31	SD	2.928	LT
D	06	65	NAS,	OAHU	N	102	X	84.29	SD	2.944	HT
D	07	65	NAS,	OAHU	N	112	X	81.14	SD	2.529	LT
D	07	65	NAS,	OAHU	N	112	X	84.93	SD	2.381	HT
D	08	65	NAS,	OAHU	N	98	X	82.20	SD	2.644	LT
D	08	65	NAS,	OAHU	N	98	X	85.93	SD	2.748	HT
D	09	65	NAS,	OAHU	N	97	X	83.01	SD	2.998	LT
D	09	65	NAS,	OAHU	N	97	X	86.62	SD	2.800	HT
D	10	65	NAS,	OAHU	N	99	X	80.88	SD	3.176	LT
D	10	65	NAS,	OAHU	N	99	X	85.37	SD	2.992	HT
D	11	65	NAS,	OAHU	N	102	X	75.55	SD	6.140	LT
D	11	65	NAS,	OAHU	N	102	X	82.52	SD	4.637	HT
D	12	65	NAS,	OAHU	N	83	X	73.52	SD	2.813	LT
D	12	65	NAS,	OAHU	N	83	X	77.66	SD	3.444	HT
D	01	66	NAS,	OAHU	N	89	X	73.15	SD	2.737	LT
D	01	66	NAS,	OAHU	N	89	X	77.24	SD	3.030	HT
D	02	66	NAS,	OAHU	N	78	X	72.82	SD	3.298	LT
D	02	66	NAS,	OAHU	N	78	X	78.37	SD	5.071	HT
D	03	66	NAS,	OAHU	N	101	X	73.58	SD	2.643	LT
D	03	66	NAS,	OAHU	N	101	X	80.52	SD	3.084	HT
D	04	66	NAS,	OAHU	N	84	X	73.95	SD	2.459	LT
D	04	66	NAS,	OAHU	N	84	X	81.31	SD	2.168	HT
D	05	66	NAS,	OAHU	N	76	X	75.50	SD	1.956	LT
D	05	66	NAS,	OAHU	N	76	X	83.89	SD	2.788	HT
D	06	66	NAS,	OAHU	N	90	X	80.44	SD	2.209	LT
D	06	66	NAS,	OAHU	N	90	X	84.71	SD	3.021	HT
D	07	66	NAS,	OAHU	N	73	X	81.38	SD	2.464	LT
D	07	66	NAS,	OAHU	N	73	X	85.48	SD	2.334	HT
D	08	66	NAS,	OAHU	N	99	X	82.10	SD	2.422	LT
D	08	66	NAS,	OAHU	N	99	X	84.22	SD	2.202	HT
D	09	66	NAS,	OAHU	N	79	X	80.99	SD	2.599	LT
D	09	66	NAS,	OAHU	N	79	X	84.56	SD	2.625	HT
D	10	66	NAS,	OAHU	N	84	X	81.42	SD	2.446	LT
D	10	66	NAS,	OAHU	N	84	X	84.48	SD	2.457	HT
D	11	66	NAS,	OAHU	N	92	X	79.52	SD	2.795	LT
D	11	66	NAS,	OAHU	N	92	X	82.30	SD	2.729	HT
D	12	66	NAS,	OAHU	N	7	X	75.29	SD	1.799	LT
D	12	66	NAS,	OAHU	N	7	X	82.29	SD	2.870	HT

TABLE 7. Minimum and Maximum Non-Earth-Covered Storage Temperatures, Monthly Summaries, NAS, Oahu, Hawaii.

D	01	65	NAS, OAHU	N	85	X	73.09	SD	3.165	LT
D	01	65	NAS, OAHU	N	85	X	81.19	SD	2.363	HT
D	02	65	NAS, OAHU	N	92	X	70.30	SD	1.862	LT
D	02	65	NAS, OAHU	N	92	X	77.73	SD	1.584	HT
D	03	65	NAS, OAHU	N	102	X	71.12	SD	3.207	LT
D	03	65	NAS, OAHU	N	102	X	80.63	SD	2.092	HT
D	04	65	NAS, OAHU	N	93	X	75.63	SD	2.514	LT
D	04	65	NAS, OAHU	N	93	X	83.33	SD	1.985	HT
D	05	65	NAS, OAHU	N	94	X	76.27	SD	3.424	LT
D	05	65	NAS, OAHU	N	94	X	83.05	SD	4.159	HT
D	06	65	NAS, OAHU	N	106	X	78.15	SD	4.158	LT
D	06	65	NAS, OAHU	N	106	X	83.93	SD	4.927	HT
D	07	65	NAS, OAHU	N	119	X	78.32	SD	4.405	LT
D	07	65	NAS, OAHU	N	119	X	85.15	SD	5.063	HT
D	08	65	NAS, OAHU	N	110	X	78.46	SD	5.528	LT
D	08	65	NAS, OAHU	N	110	X	84.83	SD	6.270	HT
D	09	65	NAS, OAHU	N	139	X	79.60	SD	5.250	LT
D	09	65	NAS, OAHU	N	139	X	85.58	SD	5.976	HT
D	10	65	NAS, OAHU	N	128	X	76.31	SD	5.483	LT
D	10	65	NAS, OAHU	N	128	X	83.46	SD	5.730	HT
D	11	65	NAS, OAHU	N	138	X	72.29	SD	5.759	LT
D	11	65	NAS, OAHU	N	138	X	81.11	SD	6.346	HT
D	12	65	NAS, OAHU	N	141	X	69.30	SD	3.601	LT
D	12	65	NAS, OAHU	N	141	X	76.39	SD	5.035	HT
D	01	66	NAS, OAHU	N	141	X	68.23	SD	4.759	LT
D	01	66	NAS, OAHU	N	141	X	7[illegible]5	SD	5.652	HT
D	02	66	NAS, OAHU	N	124	X	67.94	SD	5.303	LT
D	02	66	NAS, OAHU	N	124	X	77.10	SD	6.438	HT
D	03	66	NAS, OAHU	N	134	X	70.12	SD	4.489	LT
D	03	66	NAS, OAHU	N	134	X	82.12	SD	6.587	HT
D	04	66	NAS, OAHU	N	109	X	70.66	SD	4.840	LT
D	04	66	NAS, OAHU	N	109	X	80.59	SD	4.969	HT
D	05	66	NAS, OAHU	N	101	X	74.21	SD	4.060	LT
D	05	66	NAS, OAHU	N	101	X	83.91	SD	4.231	HT
D	06	66	NAS, OAHU	N	92	X	77.93	SD	4.415	LT
D	06	66	NAS, OAHU	N	92	X	85.75	SD	3.314	HT
D	07	66	NAS, OAHU	N	155	X	77.34	SD	4.019	LT
D	07	66	NAS, OAHU	N	155	X	84.77	SD	3.569	HT
D	08	66	NAS, OAHU	N	144	X	78.53	SD	3.336	LT
D	08	66	NAS, OAHU	N	144	X	83.58	SD	3.310	HT
D	09	66	NAS, OAHU	N	161	X	78.76	SD	3.404	LT
D	09	66	NAS, OAHU	N	161	X	84.21	SD	2.869	HT
D	10	66	NAS, OAHU	N	172	X	77.78	SD	3.786	LT
D	10	66	NAS, OAHU	N	172	X	84.09	SD	2.952	HT
D	11	66	NAS, OAHU	N	137	X	76.68	SD	2.491	LT
D	11	66	NAS, OAHU	N	137	X	82.41	SD	3.248	HT
D	12	66	NAS, OAHU	N	20	X	75.90	SD	4.103	LT
D	12	66	NAS, OAHU	N	20	X	83.75	SD	2.826	HT

TABLE 8. Minimum and Maximum Earth-Covered Storage Temperatures, Monthly Summaries, Naval Magazines, Guam.

D	08	63	NM	GUAM	N	21	X	81.10	SD	.995	LT
D	08	63	NM	GUAM	N	21	X	83.05	SD	.921	HT
D	09	63	NM	GUAM	N	50	X	80.58	SD	1.279	LT
D	09	63	NM	GUAM	N	50	X	83.02	SD	1.253	HT
D	10	63	NM	GUAM	N	68	X	80.28	SD	1.485	LT
D	10	63	NM	GUAM	N	68	X	82.41	SD	1.448	HT
D	11	63	NM	GUAM	N	60	X	80.63	SD	1.275	LT
D	11	63	NM	GUAM	N	60	X	82.30	SD	1.154	HT
D	12	63	NM	GUAM	N	47	X	79.74	SD	1.188	LT
D	12	63	NM	GUAM	N	47	X	81.85	SD	1.285	HT
D	01	64	NM	GUAM	N	51	X	79.63	SD	1.131	LT
D	01	64	NM	GUAM	N	51	X	81.43	SD	1.005	HT
D	02	64	NM	GUAM	N	55	X	79.47	SD	.979	LT
D	02	64	NM	GUAM	N	55	X	80.91	SD	.928	HT
D	03	64	NM	GUAM	N	72	X	79.74	SD	.856	LT
D	03	64	NM	GUAM	N	72	X	81.17	SD	.856	HT
D	04	64	NM	GUAM	N	83	X	79.45	SD	1.232	LT
D	04	64	NM	GUAM	N	83	X	81.51	SD	1.017	HT
D	05	64	NM	GUAM	N	76	X	79.61	SD	1.132	LT
D	05	64	NM	GUAM	N	76	X	81.36	SD	1.080	HT
D	06	64	NM	GUAM	N	208	X	80.45	SD	1.553	LT
D	06	64	NM	GUAM	N	208	X	83.33	SD	1.397	HT
D	07	64	NM	GUAM	N	279	X	80.62	SD	1.308	LT
D	07	64	NM	GUAM	N	279	X	83.36	SD	1.224	HT
D	08	64	NM	GUAM	N	270	X	80.46	SD	1.434	LT
D	08	64	NM	GUAM	N	270	X	82.69	SD	1.092	HT
D	09	64	NM	GUAM	N	290	X	79.75	SD	1.581	LT
D	09	64	NM	GUAM	N	290	X	82.29	SD	1.392	HT
D	10	64	NM	GUAM	N	308	X	79.91	SD	1.396	LT
D	10	64	NM	GUAM	N	308	X	82.44	SD	1.569	HT
D	11	64	NM	GUAM	N	271	X	80.08	SD	1.281	LT
D	11	64	NM	GUAM	N	271	X	82.30	SD	1.434	HT
D	12	64	NM	GUAM	N	318	X	79.97	SD	1.426	LT
D	12	64	NM	GUAM	N	318	X	82.27	SD	1.485	HT
D	01	65	NM	GUAM	N	292	X	78.84	SD	1.777	LT
D	01	65	NM	GUAM	N	292	X	81.40	SD	1.845	HT
D	02	65	NM	GUAM	N	294	X	78.51	SD	1.552	LT
D	02	65	NM	GUAM	N	294	X	80.70	SD	1.614	HT
D	03	65	NM	GUAM	N	353	X	78.48	SD	1.712	LT
D	03	65	NM	GUAM	N	353	X	81.33	SD	2.779	HT
D	04	65	NM	GUAM	N	303	X	79.34	SD	1.537	LT
D	04	65	NM	GUAM	N	303	X	81.68	SD	1.668	HT
D	05	65	NM	GUAM	N	266	X	80.28	SD	1.484	LT
D	05	65	NM	GUAM	N	266	X	82.78	SD	1.641	HT

TABLE 8. (Cont.)

D	06	65	NM	GUAM	N	275	X	80.45	SD	1.388	LT
D	06	65	NM	GUAM	N	275	X	82.88	SD	1.454	HT
D	07	65	NM	GUAM	N	255	X	80.11	SD	1.542	LT
D	07	65	NM	GUAM	N	255	X	82.49	SD	1.498	HT
D	08	65	NM	GUAM	N	263	X	80.07	SD	1.307	LT
D	08	65	NM	GUAM	N	263	X	82.74	SD	1.823	HT
D	09	65	NM	GUAM	N	266	X	80.24	SD	1.437	LT
D	09	65	NM	GUAM	N	266	X	83.31	SD	1.652	HT
D	10	65	NM	GUAM	N	301	X	79.95	SD	1.453	LT
D	10	65	NM	GUAM	N	301	X	82.68	SD	1.677	HT
D	11	65	NM	GUAM	N	160	X	80.28	SD	1.626	LT
D	11	65	NM	GUAM	N	160	X	82.67	SD	1.812	HT
D	12	65	NM	GUAM	N	198	X	79.46	SD	1.821	LT
D	12	65	NM	GUAM	N	198	X	82.14	SD	2.028	HT
D	01	66	NM	GUAM	N	176	X	78.61	SD	2.039	LT
D	01	66	NM	GUAM	N	176	X	81.31	SD	2.048	HT
D	02	66	NM	GUAM	N	171	X	78.19	SD	2.281	LT
D	02	66	NM	GUAM	N	171	X	80.66	SD	2.257	HT
D	03	66	NM	GUAM	N	183	X	78.79	SD	1.783	LT
D	03	66	NM	GUAM	N	183	X	80.65	SD	1.581	HT
D	04	66	NM	GUAM	N	152	X	79.41	SD	1.995	LT
D	04	66	NM	GUAM	N	152	X	81.78	SD	2.361	HT
D	05	66	NM	GUAM	N	155	X	80.15	SD	1.866	LT
D	05	66	NM	GUAM	N	155	X	83.41	SD	2.381	HT
D	06	66	NM	GUAM	N	146	X	80.99	SD	1.704	LT
D	06	66	NM	GUAM	N	146	X	84.62	SD	2.035	HT
D	07	66	NM	GUAM	N	82	X	81.10	SD	1.638	LT
D	07	66	NM	GUAM	N	82	X	84.45	SD	1.854	HT
D	08	66	NM	GUAM	N	59	X	80.76	SD	1.557	LT
D	08	66	NM	GUAM	N	59	X	83.97	SD	1.829	HT
D	09	66	NM	GUAM	N	30	X	80.03	SD	1.542	LT
D	09	66	NM	GUAM	N	30	X	83.07	SD	2.132	HT
D	10	66	NM	GUAM	N	21	X	79.81	SD	1.123	LT
D	10	66	NM	GUAM	N	21	X	83.10	SD	1.895	HT
D	11	66	NM	GUAM	N	10	X	80.20	SD	1.229	LT
D	11	66	NM	GUAM	N	10	X	83.20	SD	1.932	HT

TABLE 9. Minimum and Maximum Non-Earth-Covered Storage Temperatures, Monthly Summaries, Naval Magazines, Guam.

D	10	63	NM	GUAM	N	2	X	79.50	SD	.707	LT
D	10	63	NM	GUAM	N	2	X	82.00	SD	-.000	HT
D	11	63	NM	GUAM	N	1	X	80.00	SD	-.000	LT
D	11	63	NM	GUAM	N	1	X	81.00	SD	-.000	HT
D	12	63	NM	GUAM	N	1	X	79.00	SD	-.000	LT
D	12	63	NM	GUAM	N	1	X	81.00	SD	-.000	HT
D	01	64	NM	GUAM	N	1	X	79.00	SD	-.000	LT
D	01	64	NM	GUAM	N	1	X	80.00	SD	-.000	HT
D	02	64	NM	GUAM	N	4	X	78.25	SD	1.708	LT
D	02	64	NM	GUAM	N	4	X	83.75	SD	6.850	HT
D	03	64	NM	GUAM	N	2	X	79.50	SD	.707	LT
D	03	64	NM	GUAM	N	2	X	80.50	SD	.707	HT
D	04	64	NM	GUAM	N	3	X	79.33	SD	1.155	LT
D	04	64	NM	GUAM	N	3	X	81.67	SD	.577	HT
D	05	64	NM	GUAM	N	2	X	78.50	SD	.707	LT
D	05	64	NM	GUAM	N	2	X	80.50	SD	.707	HT
D	06	64	NM	GUAM	N	12	X	77.50	SD	3.177	LT
D	06	64	NM	GUAM	N	12	X	92.92	SD	7.115	HT
D	07	64	NM	GUAM	N	41	X	80.24	SD	2.321	LT
D	07	64	NM	GUAM	N	41	X	90.68	SD	7.237	HT
D	08	64	NM	GUAM	N	12	X	80.08	SD	1.311	LT
D	08	64	NM	GUAM	N	12	X	88.83	SD	7.697	HT
D	09	64	NM	GUAM	N	8	X	79.87	SD	3.137	LT
D	09	64	NM	GUAM	N	8	X	84.12	SD	5.330	HT
D	10	64	NM	GUAM	N	8	X	78.62	SD	1.847	LT
D	10	64	NM	GUAM	N	8	X	86.25	SD	6.205	HT
D	11	64	NM	GUAM	N	10	X	78.60	SD	2.221	LT
D	11	64	NM	GUAM	N	10	X	90.50	SD	7.634	HT
D	12	64	NM	GUAM	N	41	X	77.78	SD	1.969	LT
D	12	64	NM	GUAM	N	41	X	94.39	SD	6.232	HT
D	01	65	NM	GUAM	N	26	X	76.31	SD	1.828	LT
D	01	65	NM	GUAM	N	26	X	89.00	SD	5.269	HT
D	02	65	NM	GUAM	N	39	X	76.62	SD	1.858	LT
D	02	65	NM	GUAM	N	39	X	89.00	SD	4.730	HT
D	03	65	NM	GUAM	N	23	X	76.70	SD	1.603	LT
D	03	65	NM	GUAM	N	23	X	91.22	SD	6.389	HT
D	04	65	NM	GUAM	N	32	X	76.37	SD	2.225	LT
D	04	65	NM	GUAM	N	32	X	94.03	SD	5.365	HT
D	05	65	NM	GUAM	N	30	X	78.17	SD	1.859	LT
D	05	65	NM	GUAM	N	30	X	94.63	SD	5.007	HT
D	06	65	NM	GUAM	N	30	X	78.53	SD	1.592	LT
D	06	65	NM	GUAM	N	30	X	92.20	SD	5.047	HT

TABLE 9. (Cont.)

D	07	65	NM	GUAM	N	38	X	78.68	SD	2.791	LT
D	07	65	NM	GUAM	N	38	X	92.61	SD	5.033	HT
D	08	65	NM	GUAM	N	50	X	78.62	SD	1.660	LT
D	08	65	NM	GUAM	N	50	X	92.74	SD	5.158	HT
D	09	65	NM	GUAM	N	47	X	78.96	SD	1.488	LT
D	09	65	NM	GUAM	N	47	X	91.11	SD	6.332	HT
D	10	65	NM	GUAM	N	28	X	78.75	SD	1.378	LT
D	10	65	NM	GUAM	N	28	X	92.57	SD	6.669	HT
D	11	65	NM	GUAM	N	17	X	78.94	SD	2.106	LT
D	11	65	NM	GUAM	N	17	X	93.65	SD	6.964	HT
D	12	65	NM	GUAM	N	13	X	78.31	SD	1.182	LT
D	12	65	NM	GUAM	N	13	X	92.92	SD	7.697	HT
D	01	66	NM	GUAM	N	3	X	78.00	SD	-.000	LT
D	01	66	NM	GUAM	N	3	X	82.00	SD	1.732	HT
D	02	66	NM	GUAM	N	17	X	75.18	SD	2.099	LT
D	02	66	NM	GUAM	N	17	X	95.41	SD	6.462	HT
D	03	66	NM	GUAM	N	23	X	77.22	SD	2.907	LT
D	03	66	NM	GUAM	N	23	X	96.61	SD	4.439	HT
D	04	66	NM	GUAM	N	21	X	78.38	SD	1.962	LT
D	04	66	NM	GUAM	N	21	X	98.14	SD	2.393	HT
D	05	66	NM	GUAM	N	21	X	78.76	SD	1.338	LT
D	05	66	NM	GUAM	N	21	X	95.86	SD	2.816	HT
D	06	66	NM	GUAM	N	7	X	78.14	SD	.378	LT
D	06	66	NM	GUAM	N	7	X	100.57	SD	7.345	HT
D	07	66	NM	GUAM	N	1	X	79.00	SD	-.000	LT
D	07	66	NM	GUAM	N	1	X	87.00	SD	-.000	HT
D	08	66	NM	GUAM	N	20	X	77.75	SD	2.425	LT
D	08	66	NM	GUAM	N	20	X	92.45	SD	5.501	HT
D	09	66	NM	GUAM	N	23	X	78.65	SD	2.948	LT
D	09	66	NM	GUAM	N	23	X	92.13	SD	4.192	HT
D	10	66	NM	GUAM	N	23	X	76.43	SD	1.343	LT
D	10	66	NM	GUAM	N	23	X	94.09	SD	5.080	HT
D	11	66	NM	GUAM	N	4	X	78.00	SD	1.633	LT
D	11	66	NM	GUAM	N	4	X	90.25	SD	5.560	HT

TABLE 10. Minimum and Maximum Earth-Covered Storage Temperatures, Monthly Summaries, NAS, Agana, Guam.

L	04	63	NAS	GUAM	N	70	X	82.34	SD	1.141	LT
L	04	63	NAS	GUAM	N	70	X	83.74	SD	1.212	HT
D	05	63	NAS	GUAM	N	154	X	81.31	SD	1.345	LT
D	05	63	NAS	GUAM	N	154	X	82.66	SD	1.421	HT
D	06	63	NAS	GUAM	N	140	X	81.09	SD	1.275	LT
D	06	63	NAS	GUAM	N	140	X	82.61	SD	1.317	HT
D	07	63	NAS	GUAM	N	140	X	81.41	SD	1.368	LT
D	07	63	NAS	GUAM	N	140	X	82.84	SD	1.371	HT
D	08	63	NAS	GUAM	N	155	X	81.96	SD	1.450	LT
D	08	63	NAS	GUAM	N	155	X	83.30	SD	1.473	HT
D	09	63	NAS	GUAM	N	155	X	82.15	SD	1.189	LT
D	09	63	NAS	GUAM	N	155	X	83.52	SD	1.229	HT
D	10	63	NAS	GUAM	N	150	X	81.67	SD	1.126	LT
D	10	63	NAS	GUAM	N	150	X	83.24	SD	1.197	HT
D	11	63	NAS	GUAM	N	150	X	81.08	SD	1.293	LT
D	11	63	NAS	GUAM	N	150	X	82.19	SD	1.575	HT
D	12	63	NAS	GUAM	N	150	X	81.53	SD	1.553	LT
D	12	63	NAS	GUAM	N	150	X	83.41	SD	1.742	HT
D	01	64	NAS	GUAM	N	155	X	79.81	SD	1.373	LT
D	01	64	NAS	GUAM	N	155	X	81.90	SD	1.699	HT
D	02	64	NAS	GUAM	N	145	X	79.30	SD	1.401	LT
D	02	64	NAS	GUAM	N	145	X	81.33	SD	1.799	HT
D	03	64	NAS	GUAM	N	167	X	79.68	SD	1.864	LT
D	03	64	NAS	GUAM	N	167	X	81.80	SD	2.005	HT
D	04	64	NAS	GUAM	N	174	X	80.21	SD	0.987	LT
D	04	64	NAS	GUAM	N	174	X	82.05	SD	1.474	HT
D	05	64	NAS	GUAM	N	78	X	80.38	SD	1.009	LT
D	05	64	NAS	GUAM	N	78	X	82.18	SD	1.246	HT
D	06	64	NAS	GUAM	N	30	X	81.80	SD	1.424	LT
D	06	64	NAS	GUAM	N	30	X	83.23	SD	1.547	HT
D	07	64	NAS	GUAM	N	180	X	81.78	SD	1.646	LT
D	07	64	NAS	GUAM	N	180	X	82.94	SD	2.012	HT
D	08	64	NAS	GUAM	N	186	X	81.04	SD	1.396	LT
D	08	64	NAS	GUAM	N	186	X	82.67	SD	1.947	HT
D	09	64	NAS	GUAM	N	180	X	80.54	SD	1.477	LT
D	09	64	NAS	GUAM	N	180	X	81.96	SD	1.616	HT
D	10	64	NAS	GUAM	N	180	X	81.24	SD	1.820	LT
D	10	64	NAS	GUAM	N	180	X	82.57	SD	1.923	HT
D	11	64	NAS	GUAM	N	180	X	81.29	SD	2.129	LT
D	11	64	NAS	GUAM	N	180	X	82.73	SD	1.852	HT
D	12	64	NAS	GUAM	N	160	X	81.27	SD	2.180	LT
D	12	64	NAS	GUAM	N	160	X	82.19	SD	2.272	HT

TABLE 10. (Cont.)

D	01	65	NAS	GUAM	N	151	X	79.60	SD	1.981	LT
D	01	65	NAS	GUAM	N	151	X	80.77	SD	2.114	HT
D	02	65	NAS	GUAM	N	167	X	79.63	SD	1.772	LT
D	02	65	NAS	GUAM	N	167	X	80.77	SD	2.027	HT
D	03	65	NAS	GUAM	N	186	X	80.21	SD	1.442	LT
D	03	65	NAS	GUAM	N	186	X	81.28	SD	1.659	HT
D	04	65	NAS	GUAM	N	180	X	81.12	SD	1.458	LT
D	04	65	NAS	GUAM	N	180	X	82.53	SD	1.659	HT
D	05	65	NAS	GUAM	N	186	X	82.14	SD	1.372	LT
D	05	65	NAS	GUAM	N	186	X	83.44	SD	1.485	HT
D	06	65	NAS	GUAM	N	178	X	81.84	SD	1.270	LT
D	06	65	NAS	GUAM	N	178	X	83.05	SD	1.281	HT
D	07	65	NAS	GUAM	N	181	X	80.95	SD	1.137	LT
D	07	65	NAS	GUAM	N	181	X	82.20	SD	1.559	HT
D	08	65	NAS	GUAM	N	198	X	81.67	SD	1.753	LT
D	08	65	NAS	GUAM	N	198	X	83.01	SD	2.141	HT
D	09	65	NAS	GUAM	N	178	X	81.01	SD	2.169	LT
D	09	65	NAS	GUAM	N	178	X	82.94	SD	2.287	HT
D	10	65	NAS	GUAM	N	201	X	80.20	SD	2.818	LT
D	10	65	NAS	GUAM	N	201	X	83.30	SD	3.755	HT
D	11	65	NAS	GUAM	N	198	X	81.05	SD	3.396	LT
D	11	65	NAS	GUAM	N	198	X	84.09	SD	3.668	HT
D	12	65	NAS	GUAM	N	226	X	79.47	SD	3.334	LT
D	12	65	NAS	GUAM	N	226	X	82.62	SD	2.967	HT
D	01	66	NAS	GUAM	N	231	X	78.65	SD	3.041	LT
D	01	66	NAS	GUAM	N	231	X	81.33	SD	3.102	HT
D	02	66	NAS	GUAM	N	198	X	78.94	SD	3.706	LT
D	02	66	NAS	GUAM	N	198	X	81.79	SD	3.932	HT
D	03	66	NAS	GUAM	N	231	X	78.78	SD	3.466	LT
D	03	66	NAS	GUAM	N	231	X	82.34	SD	3.332	HT
D	04	66	NAS	GUAM	N	234	X	80.52	SD	3.286	LT
D	04	66	NAS	GUAM	N	234	X	84.18	SD	3.912	HT
D	05	66	NAS	GUAM	N	250	X	81.54	SD	4.179	LT
D	05	66	NAS	GUAM	N	250	X	86.89	SD	5.621	HT
D	06	66	NAS	GUAM	N	210	X	80.97	SD	3.806	LT
D	06	66	NAS	GUAM	N	210	X	87.48	SD	6.115	HT
D	07	66	NAS	GUAM	N	216	X	80.78	SD	3.456	LT
D	07	66	NAS	GUAM	N	216	X	86.47	SD	5.313	HT
D	08	66	NAS	GUAM	N	217	X	79.67	SD	3.787	LT
D	08	66	NAS	GUAM	N	217	X	85.46	SD	5.837	HT
D	09	66	NAS	GUAM	N	210	X	78.13	SD	3.430	LT
D	09	66	NAS	GUAM	N	210	X	83.61	SD	5.804	HT
D	10	66	NAS	GUAM	N	217	X	78.41	SD	3.270	LT
D	10	66	NAS	GUAM	N	217	X	85.36	SD	6.210	HT
D	11	66	NAS	GUAM	N	210	X	79.00	SD	3.630	LT
D	11	66	NAS	GUAM	N	210	X	85.10	SD	6.465	HT
D	12	66	NAS	GUAM	N	49	X	78.47	SD	4.093	LT
D	12	66	NAS	GUAM	N	49	X	83.98	SD	6.845	HT

TABLE 11. Minimum and Maximum Non-Earth-Covered Storage Temperatures, Monthly Summaries, NAS, Agana, Guam.

D	01	64	NAS	GUAM	N	124	X	76.11	SD	1.333	LT
D	01	64	NAS	GUAM	N	124	X	86.34	SD	4.235	HT
D	02	64	NAS	GUAM	N	100	X	75.56	SD	1.217	LT
D	02	64	NAS	GUAM	N	100	X	86.13	SD	4.077	HT
D	03	64	NAS	GUAM	N	95	X	76.33	SD	2.819	LT
D	03	64	NAS	GUAM	N	95	X	86.31	SD	3.112	HT
D	04	64	NAS	GUAM	N	125	X	77.14	SD	2.270	LT
D	04	64	NAS	GUAM	N	125	X	85.62	SD	1.839	HT
D	05	64	NAS	GUAM	N	100	X	77.48	SD	1.806	LT
D	05	64	NAS	GUAM	N	100	X	84.95	SD	1.893	HT
D	06	64	NAS	GUAM	N	99	X	80.97	SD	1.770	LT
D	06	64	NAS	GUAM	N	99	X	87.81	SD	2.271	HT
D	07	64	NAS	GUAM	N	124	X	79.27	SD	1.344	LT
D	07	64	NAS	GUAM	N	124	X	87.08	SD	1.641	HT
D	08	64	NAS	GUAM	N	100	X	78.43	SD	1.057	LT
D	08	64	NAS	GUAM	N	100	X	85.82	SD	1.019	HT
D	09	64	NAS	GUAM	N	100	X	77.75	SD	1.209	LT
D	09	64	NAS	GUAM	N	100	X	85.39	SD	1.355	HT
D	10	64	NAS	GUAM	N	125	X	78.48	SD	1.418	LT
D	10	64	NAS	GUAM	N	125	X	87.15	SD	2.091	HT
D	11	64	NAS	GUAM	N	71	X	79.51	SD	1.672	LT
D	11	64	NAS	GUAM	N	71	X	87.17	SD	2.752	HT
D	12	64	NAS	GUAM	N	91	X	77.62	SD	2.356	LT
D	12	64	NAS	GUAM	N	91	X	86.26	SD	3.797	HT
D	01	65	NAS	GUAM	N	92	X	76.34	SD	2.029	LT
D	01	65	NAS	GUAM	N	92	X	84.70	SD	3.582	HT
D	02	65	NAS	GUAM	N	85	X	77.24	SD	2.062	LT
D	02	65	NAS	GUAM	N	85	X	85.02	SD	3.098	HT
D	03	65	NAS	GUAM	N	73	X	77.77	SD	1.768	LT
D	03	65	NAS	GUAM	N	73	X	85.64	SD	2.182	HT
D	04	65	NAS	GUAM	N	113	X	79.67	SD	2.558	LT
D	04	65	NAS	GUAM	N	113	X	86.25	SD	1.578	HT
D	05	65	NAS	GUAM	N	73	X	79.97	SD	1.683	LT
D	05	65	NAS	GUAM	N	73	X	86.12	SD	1.699	HT
D	06	65	NAS	GUAM	N	89	X	79.99	SD	1.641	LT
D	06	65	NAS	GUAM	N	89	X	86.04	SD	1.783	HT
D	07	65	NAS	GUAM	N	115	X	77.92	SD	2.082	LT
D	07	65	NAS	GUAM	N	115	X	85.70	SD	2.244	HT
D	08	65	NAS	GUAM	N	90	X	79.34	SD	2.459	LT
D	08	65	NAS	GUAM	N	90	X	86.84	SD	2.114	HT
D	09	65	NAS	GUAM	N	91	X	79.16	SD	1.899	LT
D	09	65	NAS	GUAM	N	91	X	86.34	SD	2.217	HT
D	10	65	NAS	GUAM	N	123	X	78.98	SD	3.095	LT
D	10	65	NAS	GUAM	N	123	X	86.85	SD	2.698	HT
D	11	65	NAS	GUAM	N	91	X	79.53	SD	2.267	LT
D	11	65	NAS	GUAM	N	91	X	86.32	SD	3.190	HT
D	12	65	NAS	GUAM	N	108	X	78.31	SD	2.600	LT
D	12	65	NAS	GUAM	N	108	X	84.40	SD	3.467	HT

TABLE 11. (Cont.)

D	01	66	NAS	GUAM	N	72	X	77.15	SD	2.516	LT
D	01	66	NAS	GUAM	N	72	X	84.46	SD	3.603	HT
D	02	66	NAS	GUAM	N	251	X	78.37	SD	3.659	LT
D	02	66	NAS	GUAM	N	251	X	82.27	SD	3.868	HT
D	03	66	NAS	GUAM	N	62	X	78.34	SD	1.933	LT
D	03	66	NAS	GUAM	N	62	X	84.31	SD	2.906	HT
D	04	66	NAS	GUAM	N	90	X	80.08	SD	2.089	LT
D	04	66	NAS	GUAM	N	90	X	86.00	SD	1.453	HT
D	05	66	NAS	GUAM	N	61	X	81.57	SD	2.125	LT
D	05	66	NAS	GUAM	N	61	X	86.13	SD	2.225	HT
D	06	66	NAS	GUAM	N	125	X	80.84	SD	2.638	LT
D	06	66	NAS	GUAM	N	125	X	88.62	SD	1.945	HT
D	07	66	NAS	GUAM	N	101	X	82.17	SD	2.728	LT
D	07	66	NAS	GUAM	N	101	X	85.35	SD	1.967	HT
D	08	66	NAS	GUAM	N	100	X	79.66	SD	2.972	LT
D	08	66	NAS	GUAM	N	100	X	87.99	SD	1.845	HT
D	09	66	NAS	GUAM	N	125	X	78.66	SD	2.752	LT
D	09	66	NAS	GUAM	N	125	X	86.59	SD	2.167	HT
D	10	66	NAS	GUAM	N	100	X	80.54	SD	2.945	LT
D	10	66	NAS	GUAM	N	100	X	86.90	SD	3.430	HT
D	11	66	NAS	GUAM	N	100	X	80.16	SD	3.113	LT
D	11	66	NAS	GUAM	N	100	X	86.81	SD	3.228	HT

TABLE 12. Minimum and Maximum Earth-Covered Storage Temperatures, Monthly Summaries, U. S. Naval Magazines, Subic Bay, Republic of the Philippines.

D	01	62	SUBIC BAY	N	220	X	80.11	SD	2.378	LT
D	01	62	SUBIC BAY	N	220	X	83.63	SD	2.749	HT
D	02	62	SUBIC BAY	N	213	X	79.46	SD	2.712	LT
D	02	62	SUBIC BAY	N	213	X	82.67	SD	3.051	HT
D	03	62	SUBIC BAY	N	218	X	82.06	SD	2.588	LT
D	03	62	SUBIC BAY	N	218	X	85.19	SD	2.355	HT
D	04	62	SUBIC BAY	N	207	X	84.58	SD	1.078	LT
D	04	62	SUBIC BAY	N	207	X	87.17	SD	1.612	HT
D	05	62	SUBIC BAY	N	195	X	86.27	SD	1.833	LT
D	05	62	SUBIC BAY	N	195	X	89.42	SD	1.582	HT
D	06	62	SUBIC BAY	N	216	X	85.05	SD	1.390	LT
D	06	62	SUBIC BAY	N	216	X	88.19	SD	1.853	HT
D	07	62	SUBIC BAY	N	216	X	82.10	SD	2.690	LT
D	07	62	SUBIC BAY	N	216	X	85.56	SD	2.749	HT
D	08	62	SUBIC BAY	N	228	X	79.68	SD	1.659	LT
D	08	62	SUBIC BAY	N	228	X	83.07	SD	2.179	HT
D	09	62	SUBIC BAY	N	217	X	79.52	SD	1.171	LT
D	09	62	SUBIC BAY	N	217	X	82.88	SD	1.845	HT
D	10	62	SUBIC BAY	N	188	X	81.18	SD	1.802	LT
D	10	62	SUBIC BAY	N	188	X	83.94	SD	1.489	HT
D	11	62	SUBIC BAY	N	211	X	81.60	SD	1.677	LT
D	11	62	SUBIC BAY	N	211	X	84.63	SD	1.717	HT
D	12	62	SUBIC BAY	N	189	X	80.14	SD	1.586	LT
D	12	62	SUBIC BAY	N	189	X	82.90	SD	1.773	HT
D	01	63	SUBIC BAY	N	223	X	79.00	SD	1.682	LT
D	01	63	SUBIC BAY	N	223	X	82.20	SD	2.201	HT
D	02	63	SUBIC BAY	N	211	X	78.96	SD	1.792	LT
D	02	63	SUBIC BAY	N	211	X	81.58	SD	1.949	HT
D	03	63	SUBIC BAY	N	185	X	80.18	SD	2.008	LT
D	03	63	SUBIC BAY	N	185	X	83.24	SD	1.790	HT
D	04	63	SUBIC BAY	N	216	X	82.62	SD	1.965	LT
D	04	63	SUBIC BAY	N	216	X	85.53	SD	1.608	HT
D	05	63	SUBIC BAY	N	215	X	85.84	SD	1.997	LT
D	05	63	SUBIC BAY	N	215	X	88.78	SD	1.537	HT
D	06	63	SUBIC BAY	N	190	X	82.48	SD	2.381	LT
D	06	63	SUBIC BAY	N	190	X	86.56	SD	3.112	HT
D	07	63	SUBIC BAY	N	189	X	80.10	SD	1.592	LT
D	07	63	SUBIC BAY	N	189	X	83.03	SD	2.101	HT
D	08	63	SUBIC BAY	N	200	X	80.81	SD	1.669	LT
D	08	63	SUBIC BAY	N	200	X	83.77	SD	1.466	HT
D	09	63	SUBIC BAY	N	194	X	80.23	SD	1.844	LT
D	09	63	SUBIC BAY	N	194	X	83.22	SD	1.696	HT
D	10	63	SUBIC BAY	N	214	X	81.02	SD	2.487	LT
D	10	63	SUBIC BAY	N	214	X	84.16	SD	2.183	HT
D	11	63	SUBIC BAY	N	193	X	82.04	SD	2.531	LT
D	11	63	SUBIC BAY	N	193	X	84.96	SD	2.711	HT
D	12	63	SUBIC BAY	N	204	X	81.69	SD	2.635	LT
D	12	63	SUBIC BAY	N	204	X	84.35	SD	3.093	HT

TABLE 12. (Cont.)

D	01	64	SUBIC BAY	N	216	X	81.05	SD	2.516	LT
D	01	64	SUBIC BAY	N	216	X	84.02	SD	2.653	HT
D	02	64	SUBIC BAY	N	194	X	80.55	SD	2.839	LT
D	02	64	SUBIC BAY	N	194	X	83.53	SD	2.894	HT
D	03	64	SUBIC BAY	N	194	X	81.47	SD	2.831	LT
D	03	64	SUBIC BAY	N	194	X	84.66	SD	2.936	HT
D	04	64	SUBIC BAY	N	197	X	83.49	SD	2.998	LT
D	04	64	SUBIC BAY	N	197	X	87.24	SD	2.468	HT
D	05	64	SUBIC BAY	N	207	X	85.44	SD	3.004	LT
D	05	64	SUBIC BAY	N	207	X	89.66	SD	2.155	HT
D	06	64	SUBIC BAY	N	226	X	83.76	SD	2.377	LT
D	06	64	SUBIC BAY	N	226	X	88.36	SD	2.142	HT
D	07	64	SUBIC BAY	N	182	X	82.08	SD	1.909	LT
D	07	64	SUBIC BAY	N	182	X	86.21	SD	2.170	HT
D	08	64	SUBIC BAY	N	213	X	80.92	SD	1.813	LT
D	08	64	SUBIC BAY	N	213	X	84.68	SD	2.378	HT
D	09	64	SUBIC BAY	N	210	X	80.17	SD	1.946	LT
D	09	64	SUBIC BAY	N	210	X	83.59	SD	2.180	HT
D	10	64	SUBIC BAY	N	201	X	80.46	SD	1.873	LT
D	10	64	SUBIC BAY	N	201	X	82.77	SD	2.114	HT
D	11	64	SUBIC BAY	N	228	X	80.82	SD	1.937	LT
D	11	64	SUBIC BAY	N	228	X	83.34	SD	2.088	HT
D	12	64	SUBIC BAY	N	206	X	78.73	SD	2.464	LT
D	12	64	SUBIC BAY	N	206	X	81.75	SD	2.821	HT
D	01	65	SUBIC BAY	N	47	X	79.94	SD	2.120	LT
D	01	65	SUBIC BAY	N	47	X	83.21	SD	1.988	HT
D	02	65	SUBIC BAY	N	51	X	79.57	SD	1.847	LT
D	02	65	SUBIC BAY	N	51	X	82.73	SD	2.401	HT
D	03	65	SUBIC BAY	N	53	X	81.60	SD	2.429	LT
D	03	65	SUBIC BAY	N	53	X	84.02	SD	1.550	HT
D	04	65	SUBIC BAY	N	57	X	83.37	SD	2.127	LT
D	04	65	SUBIC BAY	N	57	X	86.58	SD	1.802	HT
D	05	65	SUBIC BAY	N	57	X	85.93	SD	1.879	LT
D	05	65	SUBIC BAY	N	57	X	88.65	SD	1.674	HT
D	06	65	SUBIC BAY	N	58	X	81.93	SD	1.375	LT
D	06	65	SUBIC BAY	N	58	X	86.40	SD	2.499	HT
D	07	65	SUBIC BAY	N	64	X	80.12	SD	1.618	LT
D	07	65	SUBIC BAY	N	64	X	84.20	SD	2.147	HT
D	08	65	SUBIC BAY	N	63	X	79.79	SD	1.618	LT
D	08	65	SUBIC BAY	N	63	X	82.90	SD	1.757	HT
D	09	65	SUBIC BAY	N	49	X	80.65	SD	1.234	LT
D	09	65	SUBIC BAY	N	49	X	83.92	SD	1.644	HT
D	10	65	SUBIC BAY	N	34	X	80.76	SD	1.539	LT
D	10	65	SUBIC BAY	N	34	X	83.88	SD	1.871	HT
D	11	65	SUBIC BAY	N	41	X	82.32	SD	2.554	LT
D	11	65	SUBIC BAY	N	41	X	85.59	SD	2.280	HT
D	12	65	SUBIC BAY	N	38	X	82.21	SD	2.069	LT
D	12	65	SUBIC BAY	N	38	X	84.16	SD	2.150	HT

TABLE 12. (Cont.)

D	01	66	SUBIC BAY	N	39	X	81.62	SD	2.267	LT
D	01	66	SUBIC BAY	N	39	X	83.49	SD	2.175	HT
D	02	66	SUBIC BAY	N	47	X	82.57	SD	2.103	LT
D	02	66	SUBIC BAY	N	47	X	84.53	SD	2.483	HT
D	03	66	SUBIC BAY	N	26	X	82.65	SD	2.399	LT
D	03	66	SUBIC BAY	N	26	X	85.42	SD	1.983	HT
D	04	66	SUBIC BAY	N	41	X	83.95	SD	1.949	LT
D	04	66	SUBIC BAY	N	41	X	88.05	SD	2.291	HT
D	05	66	SUBIC BAY	N	63	X	82.95	SD	3.220	LT
D	05	66	SUBIC BAY	N	63	X	88.03	SD	2.794	HT
D	06	66	SUBIC BAY	N	35	X	81.80	SD	2.247	LT
D	06	66	SUBIC BAY	N	35	X	85.40	SD	2.648	HT
D	07	66	SUBIC BAY	N	67	X	82.81	SD	1.836	LT
D	07	66	SUBIC BAY	N	67	X	84.91	SD	2.248	HT
D	08	66	SUBIC BAY	N	110	X	81.84	SD	1.743	LT
D	08	66	SUBIC BAY	N	110	X	85.18	SD	2.227	HT
D	09	66	SUBIC BAY	N	122	X	80.80	SD	1.813	LT
D	09	66	SUBIC BAY	N	122	X	84.26	SD	2.391	HT
D	10	66	SUBIC BAY	N	188	X	82.31	SD	2.001	LT
D	10	66	SUBIC BAY	N	188	X	84.80	SD	2.129	HT
D	11	66	SUBIC BAY	N	198	X	82.44	SD	2.396	LT
D	11	66	SUBIC BAY	N	198	X	84.52	SD	2.604	HT
	12	66	SUBIC BAY	N	126	X	80.47	SD	3.098	LT
		66	SUBIC BAY	N	126	X	83.60	SD	3.070	HT

TABLE 13. Minimum and Maximum Non-Earth-Covered Storage Temperatures, Monthly Summaries, U. S. Naval Magazines, Subic Bay, Republic of the Philippines.

D	01	62	SUBIC BAY	N	1	X	68.	SD	-0.	LT
D	01	62	SUBIC BAY	N	1	X	99.	SD	-0.	HT
D	02	62	SUBIC BAY				0.	SD	-0.	LT
D	02	62	SUBIC BAY				0.	SD	-0.	HT
D	03	62	SUBIC BAY	N	2	X	82.00	SD	7.071	LT
D	03	62	SUBIC BAY	N	2	X	90.00	SD	1.414	HT
D	04	62	SUBIC BAY	N	13	X	84.15	SD	2.853	LT
D	04	62	SUBIC BAY	N	13	X	87.77	SD	1.301	HT
D	05	62	SUBIC BAY	N	19	X	85.68	SD	2.110	LT
D	05	62	SUBIC BAY	N	19	X	89.95	SD	1.957	HT
D	06	62	SUBIC BAY	N	1	X	79.	SD	-0.	LT
D	06	62	SUBIC BAY	N	1	X	98.	SD	-0.	HT
D	07	62	SUBIC BAY	N	1	X	75.	SD	-0.	LT
D	07	62	SUBIC BAY	N	1	X	87.	SD	-0.	HT
D	08	62	SUBIC BAY	N	1	X	75.	SD	-0.	LT
D	08	62	SUBIC BAY	N	1	X	90.	SD	-0.	HT
D	09	62	SUBIC BAY	N	1	X	74.	SD	-0.	LT
D	09	62	SUBIC BAY	N	1	X	90.	SD	-0.	HT
D	10	62	SUBIC BAY				0.	SD	-0.	LT
D	10	62	SUBIC BAY				0.	SD	-0.	HT
D	11	62	SUBIC BAY	N	1	X	72.	SD	-0.	LT
D	11	62	SUBIC BAY	N	1	X	90.	SD	-0.	HT
D	12	62	SUBIC BAY	N	6	X	68.67	SD	4.274	LT
D	12	62	SUBIC BAY	N	6	X	94.00	SD	1.789	HT
D	01	63	SUBIC BAY	N	7	X	67.86	SD	2.795	LT
D	01	63	SUBIC BAY	N	7	X	96.29	SD	2.870	HT
D	02	63	SUBIC BAY	N	8	X	70.25	SD	7.226	LT
D	02	63	SUBIC BAY	N	8	X	94.25	SD	3.454	HT
D	03	63	SUBIC BAY	N	8	X	66.75	SD	4.803	LT
D	03	63	SUBIC BAY	N	8	X	99.00	SD	2.449	HT
D	04	63	SUBIC BAY	N	7	X	71.43	SD	5.094	LT
D	04	63	SUBIC BAY	N	7	X	100.00	SD	2.582	HT
D	05	63	SUBIC BAY	N	1	X	77.	SD	-0.	LT
D	05	63	SUBIC BAY	N	1	X	106.	SD	-0.	HT
D	06	63	SUBIC BAY	N	7	X	73.00	SD	2.160	LT
D	06	63	SUBIC BAY	N	7	X	102.00	SD	3.266	HT
D	07	63	SUBIC BAY	N	8	X	72.00	SD	1.852	LT
D	07	63	SUBIC BAY	N	8	X	95.38	SD	6.886	HT
D	08	63	SUBIC BAY	N	7	X	75.71	SD	3.039	LT
D	08	63	SUBIC BAY	N	7	X	96.86	SD	4.140	HT
D	09	63	SUBIC BAY	N	1	X	75.	SD	-0.	LT
D	09	63	SUBIC BAY	N	1	X	100.	SD	-0.	HT
D	10	63	SUBIC BAY	N	1	X	77.	SD	-0.	LT
D	10	63	SUBIC BAY	N	1	X	102.86	SD	-0.	HT
D	11	63	SUBIC BAY	N	7	X	72.86	SD	3.532	LT
D	11	63	SUBIC BAY	N	7	X	100.29	SD	4.645	HT
D	12	63	SUBIC BAY	N	8	X	70.50	SD	5.425	LT
D	12	63	SUBIC BAY	N	8	X	99.38	SD	3.739	HT

TABLE 13. (Cont.)

D	01	64	SUBIC	BAY	N	7	X	74.57	SD	5.653	LT
D	01	64	SUBIC	BAY	N	7	X	97.29	SD	3.039	HT
D	02	64	SUBIC	BAY	N	7	X	71.57	SD	3.309	LT
D	02	64	SUBIC	BAY	N	7	X	94.43	SD	9.796	HT
D	03	64	SUBIC	BAY	N	5	X	66.80	SD	3.114	LT
D	03	64	SUBIC	BAY	N	5	X	97.40	SD	3.975	HT
D	04	64	SUBIC	BAY	N	6	X	72.83	SD	8.353	LT
D	04	64	SUBIC	BAY	N	6	X	102.00	SD	4.336	HT
D	05	64	SUBIC	BAY	N	4	X	73.75	SD	4.349	LT
D	05	64	SUBIC	BAY	N	4	X	102.75	SD	2.062	HT
D	06	64	SUBIC	BAY	N	7	X	74.14	SD	3.237	LT
D	06	64	SUBIC	BAY	N	7	X	101.14	SD	6.149	HT
D	07	64	SUBIC	BAY	N	1	X	74.	SD	-0.	LT
D	07	64	SUBIC	BAY	N	1	X	100.	SD	-0.	HT
D	08	64	SUBIC	BAY	N	5	X	71.40	SD	4.561	LT
D	08	64	SUBIC	BAY	N	5	X	98.20	SD	7.294	HT
D	09	64	SUBIC	BAY	N	1	X	79.	SD	-0.	LT
D	09	64	SUBIC	BAY	N	1	X	97.	SD	-0.	HT
D	10	64	SUBIC	BAY	N	5	X	73.40	SD	5.595	LT
D	10	64	SUBIC	BAY	N	5	X	91.40	SD	4.561	HT
D	11	64	SUBIC	BAY	N	14	X	75.71	SD	7.907	LT
D	11	64	SUBIC	BAY	N	14	X	88.93	SD	6.294	HT
D	12	64	SUBIC	BAY	N	1	X	76.	SD	-0.	LT
D	12	64	SUBIC	BAY	N	1	X	77.	SD	-0.	HT

TABLE 14. Minimum and Maximum Earth-Covered Storage Temperatures, Monthly Summaries, U. S. Naval Air Station, Sangley Point, Republic of the Philippines.

D	02	65	NAV STA. P.I	N	184	X	80.51	SD	1.293	LT
D	02	65	NAV STA. P.I	N	184	X	82.14	SD	1.474	HT
D	03	65	NAV STA. P.I	N	186	X	82.89	SD	1.269	LT
D	03	65	NAV STA. P.I	N	186	X	84.60	SD	2.253	HT
D	04	65	NAV STA. P.I	N	180	X	85.76	SD	2.409	LT
D	04	65	NAV STA. P.I	N	180	X	88.32	SD	2.344	HT
D	05	65	NAV STA. P.I	N	186	X	87.86	SD	2.240	LT
D	05	65	NAV STA. P.I	N	186	X	89.12	SD	2.327	HT
D	06	65	NAV STA. P.I	N	240	X	84.12	SD	1.450	LT
D	06	65	NAV STA. P.I	N	240	X	86.26	SD	1.598	HT
D	07	65	NAV STA. P.I	N	247	X	82.47	SD	1.891	LT
D	07	65	NAV STA. P.I	N	247	X	84.60	SD	1.841	HT
D	08	65	NAV STA. P.I	N	248	X	82.81	SD	1.653	LT
D	08	65	NAV STA. P.I	N	248	X	85.00	SD	1.602	HT
D	09	65	NAV STA. P.I	N	241	X	82.66	SD	1.616	LT
D	09	65	NAV STA. P.I	N	241	X	84.66	SD	1.339	HT
D	10	65	NAV STA. P.I	N	273	X	82.92	SD	1.871	LT
D	10	65	NAV STA. P.I	N	273	X	85.29	SD	1.680	HT
D	11	65	NAV STA. P.I	N	292	X	82.64	SD	2.062	LT
D	11	65	NAV STA. P.I	N	292	X	85.16	SD	2.211	HT
D	12	65	NAV STA. P.I	N	307	X	80.74	SD	2.599	LT
D	12	65	NAV STA. P.I	N	307	X	83.91	SD	2.304	HT
D	01	66	NAV STA. P.I	N	279	X	79.93	SD	3.532	LT
D	01	66	NAV STA. P.I	N	279	X	83.96	SD	2.315	HT
D	02	66	NAV STA. P.I	N	228	X	80.24	SD	3.643	LT
D	02	66	NAV STA. P.I	N	228	X	84.31	SD	2.285	HT
D	03	66	NAV STA. P.I	N	279	X	82.35	SD	3.508	LT
D	03	66	NAV STA. P.I	N	279	X	86.11	SD	2.180	HT
D	04	66	NAV STA. P.I	N	267	X	84.61	SD	3.606	LT
D	04	66	NAV STA. P.I	N	267	X	88.82	SD	2.269	HT
D	05	66	NAV STA. P.I	N	278	X	83.15	SD	3.567	LT
D	05	66	NAV STA. P.I	N	278	X	86.42	SD	3.540	HT
D	06	66	NAV STA. P.I	N	270	X	84.47	SD	2.273	LT
D	06	66	NAV STA. P.I	N	270	X	87.39	SD	2.109	HT
D	07	66	NAV STA. P.I	N	323	X	83.46	SD	2.322	LT
D	07	66	NAV STA. P.I	N	323	X	87.42	SD	2.333	HT
D	08	66	NAV STA. P.I	N	333	X	83.50	SD	2.040	LT
D	08	66	NAV STA. P.I	N	333	X	86.92	SD	2.001	HT
D	09	66	NAV STA. P.I	N	332	X	80.77	SD	2.200	LT
D	09	66	NAV STA. P.I	N	332	X	84.92	SD	3.080	HT
D	10	66	NAV STA. P.I	N	301	X	81.73	SD	1.702	LT
D	10	66	NAV STA. P.I	N	301	X	85.51	SD	2.383	HT
D	11	66	NAV STA. P.I	N	280	X	81.77	SD	1.953	LT
D	11	66	NAV STA. P.I	N	280	X	84.97	SD	2.303	HT
D	12	66	NAV STA. P.I	N	309	X	80.39	SD	1.549	LT
D	12	66	NAV STA. P.I	N	309	X	83.59	SD	2.529	HT

TABLE 15. Minimum and Maximum Non-Earth-Covered Storage Temperatures, Monthly Summaries, U. S. Naval Air Station, Sangley Point, Republic of the Philippines.

D	02	65	NAV STA. P.I	N	182	X	79.04	SD	1.782
D	02	65	NAV STA. P.I	N	182	X	80.68	SD	1.675
D	03	65	NAV STA. P.I	N	186	X	79.76	SD	1.226
D	03	65	NAV STA. P.I	N	186	X	82.11	SD	1.883
D	04	65	NAV STA. P.I	N	135	X	82.77	SD	1.620
D	04	65	NAV STA. P.I	N	135	X	87.18	SD	2.796
D	05	65	NAV STA. P.I	N	92	X	84.34	SD	3.025
D	05	65	NAV STA. P.I	N	92	X	88.54	SD	3.516
D	06	65	NAV STA. P.I	N	30	X	80.27	SD	1.112
D	06	65	NAV STA. P.I	N	30	X	84.33	SD	1.788
D	07	65	NAV STA. P.I	N	31	X	79.06	SD	1.590
D	07	65	NAV STA. P.I	N	31	X	82.74	SD	2.529
D	08	65	NAV STA. P.I	N	31	X	79.61	SD	1.564
D	08	65	NAV STA. P.I	N	31	X	83.94	SD	1.965
D	09	65	NAV STA. P.I	N	30	X	79.43	SD	1.547
D	09	65	NAV STA. P.I	N	30	X	83.30	SD	1.878
D	10	65	NAV STA. P.I	N	29	X	80.17	SD	1.256
D	10	65	NAV STA. P.I	N	29	X	84.66	SD	2.857
D	11	65	NAV STA. P.I	N	30	X	79.83	SD	1.763
D	11	65	NAV STA. P.I	N	30	X	84.70	SD	1.317
D	12	65	NAV STA. P.I	N	31	X	79.90	SD	1.535
D	12	65	NAV STA. P.I	N	31	X	82.68	SD	1.222
D	01	66	NAV STA. P.I	N	51	X	78.22	SD	0.901
D	01	66	NAV STA. P.I	N	51	X	82.37	SD	1.685
D	02	66	NAV STA. P.I	N	28	X	79.79	SD	1.792
D	02	66	NAV STA. P.I	N	28	X	83.71	SD	1.536
D	03	66	NAV STA. P.I	N	31	X	80.71	SD	1.071
D	03	66	NAV STA. P.I	N	31	X	84.94	SD	1.825
D	04	66	NAV STA. P.I	N	30	X	82.67	SD	1.241
D	04	66	NAV STA. P.I	N	30	X	87.33	SD	1.561
D	05	66	NAV STA. P.I	N	31	X	80.61	SD	2.642
D	05	66	NAV STA. P.I	N	31	X	84.58	SD	3.548
D	06	66	NAV STA. P.I	N	30	X	81.10	SD	1.470
D	06	66	NAV STA. P.I	N	30	X	84.13	SD	1.655

Appendix D

STATISTICAL NOTES AND IMPLICATIONS

The following points concerning the temperature data should be considered before making final judgement on the contents of this report.

1. The time intervals at which temperature readings were taken were not equal. The maximum and minimum temperature readings were those encountered within the magazine during those intervals of time. The difference in reading-time intervals biases the results in both maximum and minimum directions. It has been found that the temperatures in some magazines were read daily, weekly, biweekly, monthly, or less frequently, depending on the material and procedures indigenous to each facility. This, of course, biases the results upward as a high temperature for 1 day may be the recorded temperature for that magazine for a 1-week or greater period, instead of for that specific day.

2. The amount of ammunition in the storage magazines is not always constant. The absorption of heat by the ammunition (dependent on the quantity of material) within the magazine could cause differences in temperature readings that are not accounted for.

3. The frequency at which the magazine doors are opened will also influence the temperature readings. This effect is also not accounted for.

4. The data summary indicating the number of maximum temperature readings exceeding nominal temperatures is exclusive of minimum temperature readings. Perhaps the minimum temperatures could be used in such a way as to provide the length of time which these nominal temperatures are exceeded. If, for example, the minimum temperature recorded for a reading interval is 90°F, it is certain that the temperature within the storage magazine was at least 90°F during that reading interval.

The number of data points, the averages, and the standard deviations of temperature readings for each month was reported in Appendix C because these statistics provide information concerning the distribution of temperature readings. If it is assumed that these temperature measurements are normally distributed (the Gaussian curve) within each month, and the data in most cases do not indicate that it is a poor assumption for practical use, the standard deviation can be used to attach probabilities of occurrences to nominal temperature values. For example, in May 1966, for earth-covered magazines at Subic Bay, Republic of the Philippines, the sample size is 68, the average is 88.03°F and the standard deviation is 2.794°F. From this and the assumption that the data are representative of the storage temperatures encountered in May, the probability of getting a storage temperature of 110°F or greater is for practical purposes essentially zero. If the same method is employed to the means (x) and standard deviations (S) of storage temperatures given in Appendix C, it would be found that a temperature of 115°F is unlikely to be reached in storage magazines, with the exception of a few non-earth covered "magazines" that are actually receiving and sorting buildings or temporary shelters that are found at the Naval Magazines, Guam, or Naval Magazines, Republic of the Philippines.

UNCLASSIFIED
Security Classification

DOCUMENT CONTROL DATA - R&D

(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)

1. ORIGINATING ACTIVITY (Corporate author)	2a. REPORT SECURITY CLASSIFICATION
U. S. Naval Ordnance Test Station China Lake, California 93555	UNCLASSIFIED 2b. GROUP

3. REPORT TITLE

STORAGE TEMPERATURE OF EXPLOSIVE HAZARD MAGAZINES, PART 2. WESTERN PACIFIC

4. DESCRIPTIVE NOTES (Type of report and inclusive dates)

Temperature measurement studies

5. AUTHOR(S) (Last name, first name, initial)

Kurotori, I. S., and H. Schafer

6. REPORT DATE	7a. TOTAL NO. OF PAGES	7b. NO. OF REFS
June 1967	82	None

8a. CONTRACT OR GRANT NO.	9a. ORIGINATOR'S REPORT NUMBER(S)
b. PROJECT NO. A33-536-711/216-1/ F009-06-01	NOTS TP 4143, Part 2
c.	9b. OTHER REPORT NO(S) (Any other numbers that may be assigned this report)
d.	

10. AVAILABILITY/LIMITATION NOTICES

This document is subject to special export controls and each transmittal to foreign governments or foreign nationals may be made only with prior approval of the U. S. Naval Ordnance Test Station.

11. SUPPLEMENTARY NOTES	12. SPONSORING MILITARY ACTIVITY
	Naval Air Systems Command Naval Material Command Washington, D. C. 20360

13. ABSTRACT

Storage magazine temperature measurements (188,614 data points) from the tropic regions of the Pacific are under study. The areas under consideration are the Republic of the Philippines, Hawaii, and Guam. This data collection is for the purpose of establishing a temperature criterion by statistical methods for ordnance stored in explosive hazard magazines.

This report is the second of the series of reports which will cover explosive hazard magazine storage throughout the world. This report includes 47 figures and 14 tables.

DD FORM 1 JAN 64 1473 0101-807-6800

UNCLASSIFIED
Security Classification

UNCLASSIFIED
Security Classification

14 KEY WORDS	LINK A		LINK B		LINK C	
	ROLE	WT	ROLE	WT	ROLE	WT
MAGAZINE TEMPERATURES AT NAD, OAHU, HAWAII NAS, OAHU, HAWAII NAVAL MAGAZINES, GUAM NAS, AGANA, GUAM U. S. NAVAL MAGAZINES, SUBIC BAY, P. I. U. S. NAS, SANGLEY POINT, P. I. TEMPERATURE DATA RETRIEVAL TEMPERATURE DATA REDUCTION						

INSTRUCTIONS

1. **ORIGINATING ACTIVITY**: Enter the name and address of the contractor, subcontractor, grantee, Department of Defense activity or other organization *(corporate author)* issuing the report.

2a. **REPORT SECURITY CLASSIFICATION**: Enter the overall security classification of the report. Indicate whether "Restricted Data" is included. Marking is to be in accordance with appropriate security regulations.

2b. **GROUP**: Automatic downgrading is specified in DoD Directive 5200.10 and Armed Forces Industrial Manual. Enter the group number. Also, when applicable, show that optional markings have been used for Group 3 and Group 4 as authorized.

3. **REPORT TITLE**: Enter the complete report title in all capital letters. Titles in all cases should be unclassified. If a meaningful title cannot be selected without classification, show title classification in all capitals in parenthesis immediately following the title.

4. **DESCRIPTIVE NOTES**: If appropriate, enter the type of report, e.g., interim, progress, summary, annual, or final. Give the inclusive dates when a specific reporting period is covered.

5. **AUTHOR(S)**: Enter the name(s) of author(s) as shown on or in the report. Enter last name, first name, middle initial. If military, show rank and branch of service. The name of the principal author is an absolute minimum requirement.

6. **REPORT DATE**: Enter the date of the report as day, month, year, or month, year. If more than one date appears on the report, use date of publication.

7a. **TOTAL NUMBER OF PAGES**: The total page count should follow normal pagination procedures, i.e., enter the number of pages containing information.

7b. **NUMBER OF REFERENCES**: Enter the total number of references cited in the report.

8a. **CONTRACT OR GRANT NUMBER**: If appropriate, enter the applicable number of the contract or grant under which the report was written.

8b, 8c, & 8d. **PROJECT NUMBER**: Enter the appropriate military department identification, such as project number, subproject number, system numbers, task number, etc.

9a. **ORIGINATOR'S REPORT NUMBER(S)**: Enter the official report number by which the document will be identified and controlled by the originating activity. This number must be unique to this report.

9b. **OTHER REPORT NUMBER(S)**: If the report has been assigned any other report numbers *(either by the originator or by the sponsor)*, also enter this number(s).

10. **AVAILABILITY/LIMITATION NOTICES**: Enter any limitations on further dissemination of the report, other than those imposed by security classification, using standard statements such as:

(1) "Qualified requesters may obtain copies of this report from DDC."

(2) "Foreign announcement and dissemination of this report by DDC is not authorized."

(3) "U. S. Government agencies may obtain copies of this report directly from DDC. Other qualified DDC users shall request through _____."

(4) "U. S. military agencies may obtain copies of this report directly from DDC. Other qualified users shall request through _____."

(5) "All distribution of this report is controlled. Qualified DDC users shall request through _____."

If the report has been furnished to the Office of Technical Services, Department of Commerce, for sale to the public, indicate this fact and enter the price, if known.

11. **SUPPLEMENTARY NOTES**: Use for additional explanatory notes.

12. **SPONSORING MILITARY ACTIVITY**: Enter the name of the departmental project office or laboratory sponsoring *(paying for)* the research and development. Include address.

13 **ABSTRACT**: Enter an abstract giving a brief and factual summary of the document indicative of the report, even though it may also appear elsewhere in the body of the technical report. If additional space is required, a continuation sheet shall be attached.

It is highly desirable that the abstract of classified reports be unclassified. Each paragraph of the abstract shall end with an indication of the military security classification of the information in the paragraph, represented as *(TS), (S), (C), or (U)*

There is no limitation on the length of the abstract. However, the suggested length is from 150 to 225 words.

14. **KEY WORDS**: Key words are technically meaningful terms or short phrases that characterize a report and may be used as index entries for cataloging the report. Key words must be selected so that no security classification is required. Identifiers, such as equipment model designation, trade name, military project code name, geographic location, may be used as key words but will be followed by an indication of technical context. The assignment of links, roles, and weights is optional.

UNCLASSIFIED
Security Classification

ABSTRACT CARD

U. S. Naval Ordnance Test Station
Storage Temperature of Explosive Hazard Magazines, Part 2. Western Pacific, by I. S. Kurotori and H. C. Schafer. China Lake, Calif., NOTS, June 1967. 82 pp. (NOTS TP 4143, Part 2), UNCLASSIFIED.

ABSTRACT. Storage magazine temperature measurements (188,614 data points) from the tropic regions of the Pacific are under study. The areas under consideration are the Republic of the Philippines, Hawaii, and Guam. This data collection is for the purpose of establishing a temperature

(Over)
1 card, 8 copies

U. S. Naval Ordnance Test Station
Storage Temperature of Explosive Hazard Magazines, Part 2. Western Pacific, by I. S. Kurotori and H. C. Schafer. China Lake, Calif., NOTS, June 1967. 82 pp. (NOTS TP 4143, Part 2), UNCLASSIFIED.

ABSTRACT. Storage magazine temperature measurements (188,614 data points) from the tropic regions of the Pacific are under study. The areas under consideration are the Republic of the Philippines, Hawaii, and Guam. This data collection is for the purpose of establishing a temperature

(Over)
1 card, 8 copies

U. S. Naval Ordnance Test Station
Storage Temperature of Explosive Hazard Magazines, Part 2. Western Pacific, by I. S. Kurotori and H. C. Schafer. China Lake, Calif., NOTS, June 1967. 82 pp. (NOTS TP 4143, Part 2), UNCLASSIFIED.

ABSTRACT. Storage magazine temperature measurements (188,614 data points) from the tropic regions of the Pacific are under study. The areas under consideration are the Republic of the Philippines, Hawaii, and Guam. This data collection is for the purpose of establishing a temperature

(Over)
1 card, 8 copies

U. S. Naval Ordnance Test Station
Storage Temperature of Explosive Hazard Magazines, Part 2. Western Pacific, by I. S. Kurotori and H. C. Schafer. China Lake, Calif., NOTS, June 1967. 82 pp. (NOTS TP 4143, Part 2), UNCLASSIFIED.

ABSTRACT. Storage magazine temperature measurements (188,614 data points) from the tropic regions of the Pacific are under study. The areas under consideration are the Republic of the Philippines, Hawaii, and Guam. This data collection is for the purpose of establishing a temperature

(Over)
1 card, 8 copies

NOTS TP 4143
Part 2
criterion by statistical methods for ordnance stored in explosive hazard magazines.

This report is the second of the series of reports which will cover explosive hazard magazine storage throughout the world. This report includes 47 figures and 14 tables.

NOTS TP 4143
Part 2
criterion by statistical methods for ordnance stored in explosive hazard magazines.

This report is the second of the series of reports which will cover explosive hazard magazine storage throughout the world. This report includes 47 figures and 14 tables.

NOTS TP 4143
Part 2
criterion by statistical methods for ordnance stored in explosive hazard magazines.

This report is the second of the series of reports which will cover explosive hazard magazine storage throughout the world. This report includes 47 figures and 14 tables.

NOTS TP 4143
Part 2
criterion by statistical methods for ordnance stored in explosive hazard magazines.

This report is the second of the series of reports which will cover explosive hazard magazine storage throughout the world. This report includes 47 figures and 14 tables.